ALSoft Power Utilities™

Apple® Macintosh® System 7 Compatible

DiskExpress® II
Power Disk Optimizer

MasterJuggler®
Power Font Suitcase & Applications Manager

MultiDisk™
Power Disk Partitioner

MenuExtend™
Power Apple Menu Extender

DiskCheck
Power Disk & Directory Diagnostics

ScreenEclipse™
Power Screen Saver

DiskFlash™
Power Disk Activity Indicator

MACINTOSH SYSTEM SOFTWARE

·A·L·S·O·F·T·

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ALSoft Power Utilities Credits:

DiskExpress II	Al Whipple, Mark Audas, Sean Neely
MasterJuggler	Paul Cozza
ScreenEclipse	Rusty Little
DiskFlash	Rusty Little
MenuExtend	Roger Cauvin
DiskCheck	Al Whipple
MultiDisk	Al Whipple
MultiDisk Partition Recover	Steve Gehrman and Russ Ferrill
Manual	Al Whipple, Mark Audas, Russ Ferrill and Beth Heyn
Editing	Larry Davis and Linda Hughes

Chapter 1

Introduction

ALSoft Power Utilities: An Overview

What is ALSoft Power Utilities?

ALSoft Power Utilities is a collection of performance enhancing utilities for the Macintosh. The combination of these products gives you all the power you need. The components of ALSoft Power Utilities are:

- DiskExpress II - disk optimizer
- MasterJuggler - font suitcase and applications manager
- MultiDisk - disk partitioner
- MenuExtend -System 7 Apple Menu enhancer
- DiskCheck - disk and directory diagnostic tool
- ScreenEclipse - screen saver
- DiskFlash - disk activity indicator

ALSoft Power Utilities includes all the utilities you need to make your Macintosh faster, smarter and safer.

DiskExpress II is the safest and most powerful disk optimizer available. DiskExpress II monitors your file usage to determine the optimum location for files on a hard disk. This personalized optimization results in better hard disk performance than can be achieved with other disk optimization programs. Using advanced "Verify Reads and Writes" technology, DiskExpress II double-checks all of its activity to maintain the integrity of the data during optimization. User control features include Verify Reads and Writes to and from the disk, Quick Optimization, adjustable memory buffer size, Optimization Index analysis, time of day to optimize and a File Activity display.

MasterJuggler easily manages font suitcases, applications, sounds and desk accessories. It extends the power of your Macintosh by offering quick access to hundreds of TrueType and PostScript fonts, DAs and sounds without having to install them in the System file. You can even access them across networks under AppleShare, File Share or TOPS. Pop-up menus provide a convenient way to open, and switch between, applications and documents. Through advanced font and sound compression, MasterJuggler also saves valuable disk space.

MultiDisk is a safe and flexible Macintosh disk partitioning utility. MultiDisk can partition any disk – including file servers – into resizable, password protected and encrypted partitions to increase your overall disk performance. With MultiDisk, partitions can be locked to add virus protection, data safety and security. Included is the new MultiDisk Partition Recover, a utility that recovers MultiDisk partitions after a hard disk crash. The recovered data could have been lost had it not been stored in a MultiDisk partition.

MenuExtend enhances the System 7 Apple Menu for quick and easy access to files. MenuExtend automatically creates submenus up to five levels deep for every folder within your Apple Menu. Each submenu displays the contents of its associated folder. An optional setting permits folders within a submenu to be grouped together at the top or bottom of that submenu. Unlike similar utilities, MenuExtend does not use a lot of memory.

DiskCheck is a complete disk diagnostic program that detects, diagnoses and pinpoints disk directory damage as well as hardware malfunctions.

ScreenEclipse is a screen saver designed to prevent screen "burn-in" by darkening the computer's screen. Unlike other screen savers, ScreenEclipse does not use large amounts of memory or disk space, and it will not interfere with any computer activity (especially important on a file server.) ScreenEclipse accomplishes this by controlling screen brightness rather than drawing images on the screen. Options include setting the degree of darkness and the idle time before an eclipse.

DiskFlash shows any disk activity by briefly flashing a disk read or write activity icon in the menu bar.

Note: You must have System 7 for MenuExtend to work. ScreenEclipse runs on Classics, LCs, Quadras and the Mac II family.

Section 1: Getting Started With ALSoft Power Utilities

Getting Started will start you off on the right track. You'll learn how to make a backup copy of the ALSoft Power Utilities diskettes and how to register your new purchase.

First Make A Backup

ALSoft Power Utilities is not copy protected, so the Finder can be used to create backups of the ALSoft Power Utilities 1 and ALSoft Power Utilities 2 master disks.

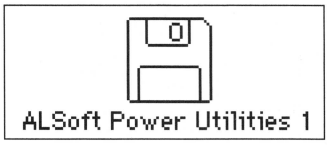

Figure 1-1
ALSoft Power Utilities 1 Diskette

1) Set the write protect tab on the ALSoft Power Utilities 1 master disk to the write protect position (hole open.)

2) From the Finder, erase a double-sided disk and name it "ALSoft Power Utilities 1 BU." The "BU" suffix is to indicate that it is a backup of the original diskette.

3) Make a complete copy of the ALSoft Power Utilities 1 master disk by dragging the icon of the master disk to the icon of the blank "ALSoft Power Utilities 1" disk. Let the Finder replace the entire contents of the empty disk.

4) Repeat steps 1 through 3 for ALSoft Power Utilities 2.

ALSoft Power Utilities requires System Software version 6.0.4 or greater. Both the Finder AND System versions must be 6.0.4 or greater. MenuExtend requires System Software version 7 or greater. MasterJuggler is not compatible with Suitcase. Do not have them both installed in your System folder at the same time.

Be Sure To Register Your Purchase

1) In the Finder, click once with the mouse pointer (arrow) on the ALSoft Power Utilities 1 disk icon to select it.

2) Choose the Get Info command from the File menu. The release number, and serial number are in the Info window (shown in Figure 1-2.)

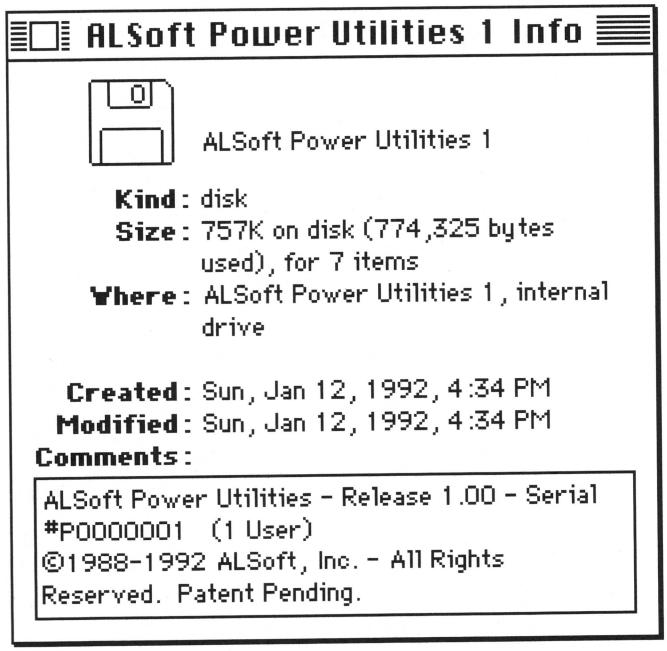
ALSoft Power Utilities 1 Info
ALSoft Power Utilities 1
Kind: disk
Size: 757K on disk (774,325 bytes used), for 7 items
Where: ALSoft Power Utilities 1, internal drive
Created: Sun, Jan 12, 1992, 4:34 PM
Modified: Sun, Jan 12, 1992, 4:34 PM
Comments:
ALSoft Power Utilities - Release 1.00 - Serial #P0000001 (1 User)
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Figure 1-2
The Info window contains your serial number

3) Completely fill out and sign the enclosed product registration card and mail it to ALSoft. Be sure to include the serial number.

Note About Your Serial Number: Your serial number is also on the diskette label of ALSoft Power Utilities 1. This serial number is required for proper registration of your purchase so that you may receive customer support, updates and future product special offers.

Section 2: Installing ALSoft Power Utilities

ALSoft Power Utilities is easily installed by using the installer program on the ALSoft Power Utilities 1 diskette. Follow these steps:

1) Double-click to open the Installer icon on ALSoft Power Utilities 1.

The Install window will appear.

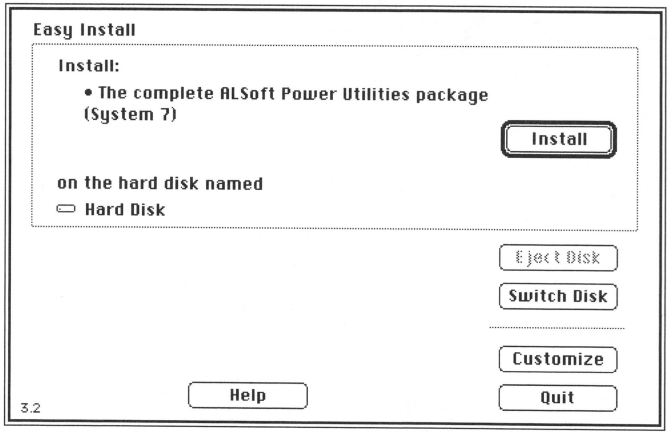

Figure 1-3
The ALSoft Power Utilities Installer Window

2) Make sure that the disk indicated on the screen is the one on which you want to install ALSoft Power Utilities.

If the wrong hard disk is indicated, click the Switch Disk button until the correct hard disk's name appears.

3) Choose Easy or Custom Installation.

To Easy Install:

- Click Install.
  A complete set of ALSoft Power Utilities will be installed on the chosen drive.

To Custom Install:

- Click Customize.
  The custom installation screen appears, with a list showing all the components of ALSoft Power Utilities for both System 6 and System 7.

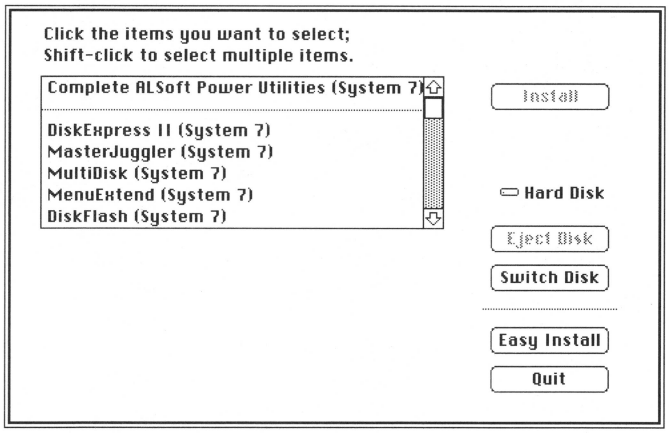

Figure 1-4
The Custom Install Window

- Scroll through the list of items and click while holding down the Shift key to select the ones you want to install.
  As you select items, their names appear at the lower-left portion of the dialog box.
- Click the Install button to install ALSoft Power Utilities on the selected drive.
  The Installer begins the installation. On-screen messages report copying status.
- When the ALSoft Power Utilities 1 is ejected, you will see a message asking you to insert ALSoft Power Utilities 2. Insert the specified disk.

Depending on your Macintosh model, you may be asked to switch disks more than once. Clicking the Stop button cancels the installation.

4) **When you see the message reporting that Installation was successful, click the Quit button.**

The Installer window will close. (If for some reason the installation was not successful, you will see a different message, and you will need to begin installation again.)

5) **Choose Restart from the Special menu to begin working with ALSoft Power Utilities.**

The Macintosh restarts with the ALSoft Power Utilities loaded.

Look for the icons of each installed product (except DiskCheck) to be displayed momentarily in the lower portion of the Macintosh screen.

Loaded Not Loaded Error

Figure 1-3
Examples of the types of icons displayed at startup

If The Loaded Icons Appear

As your Macintosh restarts, each installed product should display its Loaded icon. If so, the installation is successful. Read the following chapters for more detailed information about each product.

Loading Problems. What Went Wrong?

If a Not Loaded icon is displayed (icon has an "X" through it), try the following:

1) Restart your Macintosh. Make sure not to press the **Shift**, **Command** or **Option** keys while the Macintosh is starting.

2) Make sure that you have not locked any of the ALSoft Power Utilities that are in your System Folder.

3) After the Macintosh finishes starting, open the Control Panel or desk accessory for each product that did not load. An error message may be displayed which states the reason for not loading. See the Trouble Shooting and Error Messages section of the appropriate product chapter.

If an Error icon is displayed, then verify that the System file on the startup disk is version 6.0.4 or greater. You may also have exceeded the allowable number of users for your copy of ALSoft Power Utilities. Refer to the instructions for Installing ALSoft Power Utilities to attempt installation again.

Deinstalling ALSoft Power Utilities

If you ever have a need to deinstall any of the ALSoft Power Utilities, follow these steps:

1) Insert the ALSoft Power Utilities 1 diskette and double-click on the Installer.
2) Press the Option key and click Customize.
3) Choose any or all of the components of ALSoft Power Utilities by holding down the Shift key while clicking on your selections.
4) Click the Remove button.

Copyright Notice

As stated in the copyright notice in this manual, each Macintosh that will or could run ALSoft Power Utilities simultaneously will require a separately purchased copy of ALSoft Power Utilities.

Getting Help

ALSoft Power Utilities has been designed by ALSoft to be easy-to-use by all Macintosh owners. Virtually all questions asked by ALSoft Power Utilities users can be answered by **READING THIS MANUAL.** We believe this manual is complete, but if the answer to your question is not in this manual, please call ALSoft's Customer Support at (713) 353-1510. Our Customer Support Specialists will be ready to help you. When you call, please be sure to have the serial number of your copy of ALSoft Power Utilities ready to give the ALSoft Customer Support Specialist.

Chapter 2

DiskExpress II

A Look At The Powerful DiskExpress II

The Power Of ALSoft DiskExpress II Is In Your Hands

DiskExpress II, developed by ALSoft, is the first truly **personalized disk optimization System software**.

How Fragmentation Affects You And Your Macintosh

Each time you copy or save a file to your hard disk, the potential exists for the file to be broken into two or more fragments. A file is said to be fragmented when it is stored in noncontiguous blocks (blocks not located next to each other – see Figure 2-1.) Large amounts of contiguous free space cannot prevent file fragmentation.

Adding, deleting, copying, duplicating and modifying files are common tasks that will increase fragmentation and decrease the efficiency of your hard disk. To read an entire fragmented file, your hard drive must move its head from one part of a volume to another. The more fragmented a file becomes, the longer it takes to retrieve its information.

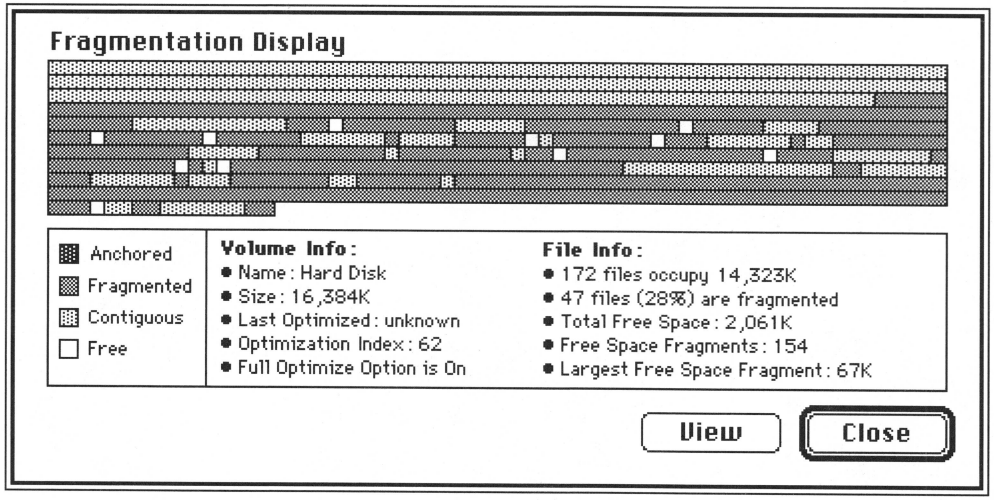

Figure 2-1
A Typical Fragmented Hard Disk

How File Location Affects You And Your Macintosh

Figure 2-2 displays the files on a typical disk according to their frequency of use. Under normal operation, seldom-used files (most of any user's files), free space and frequently used files are stored randomly throughout the disk. This places progressively higher demands on the disk head as it accesses your frequently used files, resulting in longer file access times and decreasing individual productivity.

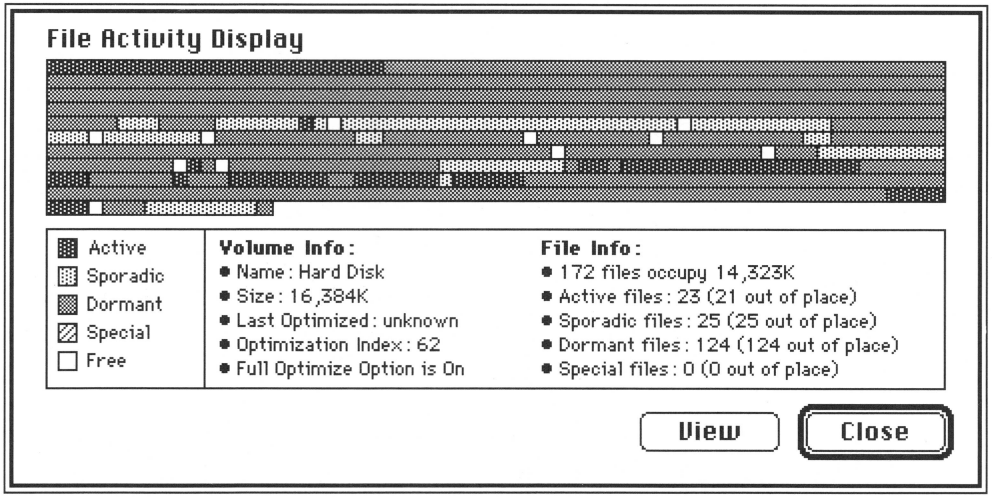

Figure 2-2
View of File Locations by Activity

Why Simple Defragmentation Isn't The Answer

Other defragmentation programs move pieces of individual files to adjacent locations on the disk. They make no provision for a file's frequency of use and how its location will affect the performance of your hard disk.

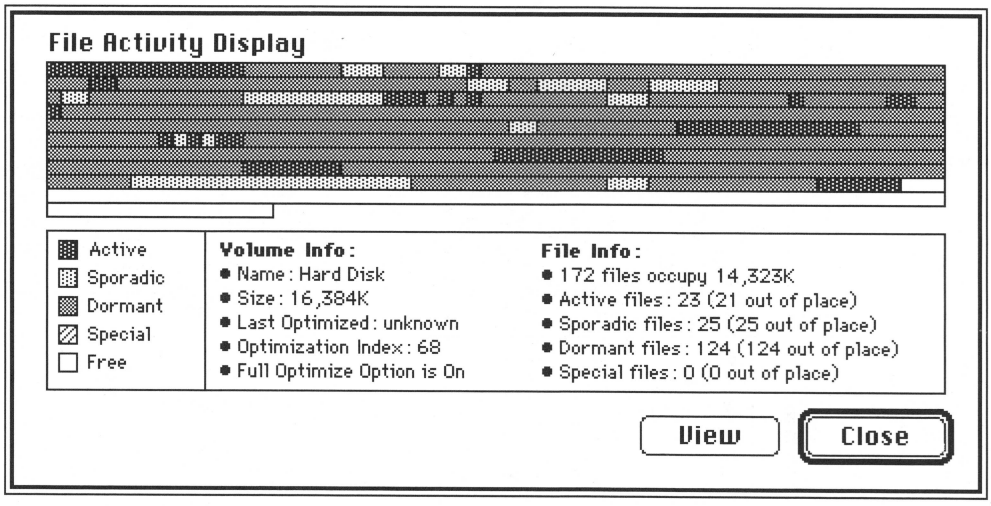

Figure 2-3
A Typical Hard Disk Defragmented By Other Products

Why ALSoft DiskExpress II Is The Only Answer

DiskExpress II adapts to the way you work on your Macintosh in your particular environment. DiskExpress II monitors your daily file usage to determine the absolute optimum file placement on your hard disk. DiskExpress II intelligently groups your files (see Figure 2-4) – frequently used files are placed at the front of the hard disk, next to the directory, for optimum access. Free space is positioned next to the frequently used files to minimize the effects of any fragmentation that may occur between optimizations. Finally, seldom-used and dormant files are placed out-of-the-way at the back of the disk.

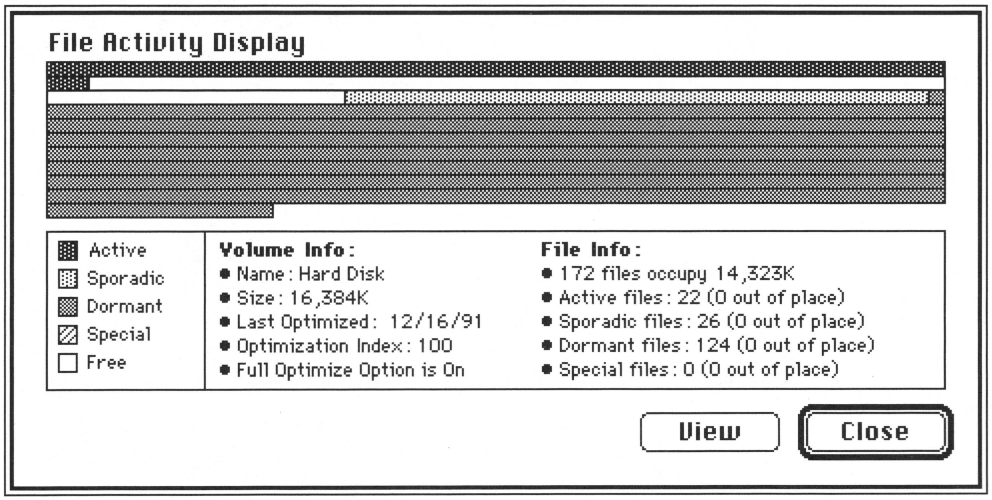

Figure 2-4
A Typical Disk Optimized By DiskExpress II

How DiskExpress II Personalizes Disk Optimization

Unprecedented ALSoft advancements in optimization technology have made DiskExpress II even more powerful and personalized than ever before.

1. Choose Manual or Automatic Optimization

With DiskExpress II, you are always in complete control over the optimization of your hard disk. Depending upon your needs, choose either manual or automatic optimization. If you choose automatic, DiskExpress II will optimize automatically whenever necessary – while you continue to work on your Macintosh.

For network administrators in charge of busy file servers, DiskExpress II offers a way to optimize without taking file servers off-line. Your company's productivity is never compromised in order to optimize.

2. Customized Optimization

DiskExpress II uses patent-pending technology to adapt to the way you work on your Macintosh in your particular environment. DiskExpress II monitors your daily file usage to determine the optimum placement for files on your hard disk. DiskExpress II intelligently groups your files – frequently used files are placed at the front of the hard disk, next to the directory, for optimum access. Free space is positioned next to the frequently used files to minimize the effects of any fragmentation that may occur between optimizations. Finally, seldom-used and dormant files are placed out-of-the-way at the back of the disk.

3. Choose Quick or Full Optimization

With DiskExpress II, you can choose full optimization or quick optimization. Full optimization optimizes all your files and your entire hard disk, while quick optimization optimizes only your most frequently used files. By skipping all the sporadically used and dormant files (which account for the majority of most users' files), optimization takes less time.

4. Optimize Only When Necessary

With DiskExpress II you never have to wonder if it is time to optimize. Using the "Optimization Index", an exclusive invention of ALSoft, you can indicate to DiskExpress II how often you want to optimize. The higher the Optimization Index (a number which you select from 1 to 100), the less fragmentation and the less file misplacement you are willing to accept before automatic optimization should be scheduled.

5. **Advanced Time Control**

DiskExpress II lets you control the times of day you want to automatically optimize. Optimize during lunch or late at night. You set the times, in half-hour increments, during which scheduled optimization will take place.

6. **Choose The Buffer Size That Works Best For You**

The buffer is the memory used during file optimization. With DiskExpress II, you can easily change the buffer size. By setting a large memory buffer, DiskExpress II will optimize volumes faster. The buffer size you choose, however, should depend upon both your needs and your Macintosh configuration.

7. **Responsiveness To User Activity**

DiskExpress II has built-in "extra-sensitivity" to all kinds of computer activity in a work situation. That includes sensitivity to all file (disk I/O), printer (serial) and communications activity as well as any user intervention. A click of the mouse or a press of a key will instantly signal DiskExpress II to stop and yield to the application which is running. Once all activity stops, DiskExpress II will pause 30 seconds before proceeding. DiskExpress II optimizes your files one file at a time. As a result, DiskExpress II can be interrupted at any time without scrambling all of the information on your hard disk.

DiskExpress II Is The State-Of-The-Art Optimizer

ALSoft is the leader in state-of-the-art disk optimization technology. That is why so many leading-edge advancements can only be found in DiskExpress II.

DiskExpress II fully supports all major bad block sparing software. Not only can it detect spared bad blocks without reporting them as bad again, DiskExpress II is able to optimize around them. And more importantly, you don't have to reformat your entire hard disk.

Using advanced "Verify Reads and Writes" technology, DiskExpress II maintains the integrity of your files as they are optimized. DiskExpress II verifies your data by double-checking all of its read and write activity to your hard disk – including the directory. DiskExpress II's data verification is "hardware independent" enabling it to work reliably on any hard disk.

DiskExpress II can optimize files of any size – including huge graphics and database files. Instead of skipping over big files or your entire disk, DiskExpress II can optimize even when there is virtually no free space left on your hard disk.

ALSoft designed DiskExpress II to work with many of the features of System Software 7. They include:

- Full compatibility with all Apple File Sharing access privileges, enabling DiskExpress II to optimize without interfering with File Sharing access privileges

- DiskExpress II will not interfere with System 7 aliases, so it can optimize without changing any alias reference information to your actual files.

- DiskExpress II supports System 7's bad block sparing mechanism. Not only can it detect bad blocks spared by System 7 without reporting them as bad again, DiskExpress II is able to optimize around them. And more importantly, you don't have to reformat your entire hard disk.

- DiskExpress II gives special treatment to Virtual Memory swap files and start-up system extensions during optimization. By placing the Virtual Memory file at the front of the hard drive next to the directory and by grouping extension files together (within their priority group), DiskExpress II offers enhanced virtual memory performance and improved computer start-up speeds.

- DiskExpress II supports both 32-bit mode and System 7's balloon help.

With DiskCheck, DiskExpress II's companion Power Diagnostics software, you can also get the help you need to diagnose and pinpoint disk directory damage as well as hardware malfunctions. DiskCheck provides additional assistance by listing those files which are anchored (unable to be optimized) and explains why they are anchored.

More Graphical Information You Can Really Use

A click of the Volume Info button opens a window which graphically displays the file and free space fragmentation on your hard disk. This window also presents important information relating to the hard disk and graphically displays where files of different priorities are located on the hard disk. As a result, you never have to wonder if optimization is really working. DiskExpress II always gives you graphic proof you can see both on your monitor and in improved disk performance.

Improve the Speed of Your Network File Server

Unlike many conventional optimization utilities, DiskExpress II maintains all AppleShare and File Share access privileges and is compatible with TOPS®, enabling it to significantly improve the speed of network file servers. Network licenses are also available for your convenience.

Note About Memory: If you plan to install DiskExpress II on your AppleShare file server, the Macintosh must have at least 2 megabytes of memory.

Easy Compatibility

DiskExpress II is compatible with System Software Version 6 and System 7. DiskExpress II supports any HFS disk connected to a Macintosh Plus or newer computer. DiskExpress II also maintains all file directory information making it compatible with all hard disk backup programs.

Notes About Compatibility: The "Read Before Using DiskExpress!" document contains important information about compatibility issues concerning DiskExpress II. To review this document, simply double-click the "Read Before Using DiskExpress!" icon. You must read this document before installing DiskExpress II.

Warning about TurboCharger, TurboCache, and PowerDisk: If you own TurboCharger, TurboCache, or PowerDisk, you must deinstall them. Do not run DiskExpress II if TurboCharger, TurboCache, or PowerDisk is running.

Section 1: Basic Terms And Concepts

This chapter provides helpful background information on each facet of DiskExpress II. These terms and concepts will be important in later chapters that describe how to use DiskExpress II.

Application Program

An **application program** is a tool your computer uses to manipulate information and perform a useful function for you. Applications include such products as MacWrite and MacPaint.

Block

A **block** is one of an integral number of areas that composes a volume. Each block holds as little as 1/2K of data. A double-sided floppy disk has 1,600 blocks while a 20 megabyte hard disk can have over 40,000 blocks. The Macintosh stores files by breaking them into block-size pieces and writing them into unused blocks wherever they are available.

Directory

Blocks set aside by the Macintosh to store the number, names, locations (which blocks), and sizes of files for each volume comprise the **directory**.

Disks

Disks are the magnetic media on which information is stored. There are both floppy disks, such as the 3.5-inch disk which comes with DiskExpress II, and hard disks, like the Apple Hard Disk 20SC. A disk must be initialized before it can be used.

Document

A **document** is a type of file that you create with an application. Documents include the information you enter, modify, view or save to your disk.

Eligible Volume

To be **eligible** for automatic optimization by DiskExpress II, a volume must have been created as an HFS volume. In addition, an eligible volume must be located on a hard disk drive (not a diskette) that is locally attached to the Macintosh, it must not be write protected, and it must have some free space available on it.

Note About Networks: DiskExpress II will not work with any volume that you must access via a network because it is on a file server. These volumes are only eligible to another copy of DiskExpress II installed on the file server.

File
A file is a collection of information stored in a volume. Files can be system files, application files or document files.

File Server
A **file server** is an application program designed to allow many Macintosh users to share common files via a network. Examples of AppleTalk network file server applications are AppleShare, File Share and TOPS.

Fragmented File
A **fragmented file** is a file that is stored in noncontiguous blocks (blocks not located next to each other.) Over time, virtually every file can become fragmented, including the volume directory. To read an entire fragmented file, your hard drive must move its head from one part of a volume to another. The more fragmented files become, the longer it takes to retrieve information from them.

Fragmented Volume
A **fragmented volume** is a volume that contains fragmented files or fragmented free space. Free space is considered fragmented if the unused blocks are noncontiguous.

Free Space
The **free space** encompasses all the unused blocks on a volume. As free space, these blocks are available to be allocated to files or to the directory. Once a file is deleted, the blocks previously occupied by the file will be returned to the free space.

Partitions
Many hard disks come with management utilities which allow you to divide a volume into additional volumes called **partitions**. There is also independent system software, such as MultiDisk™ from ALSoft, SUM and Hard Disk Partition™ which allows you to partition a hard disk.

Startup Volume
The **startup volume** is the volume which contains a group of special files stored in the System Folder. Your Macintosh cannot operate without the information in these files. The startup volume appears at the top-right corner of the desktop.

Volume
An initialized disk is called a **volume**. Because a disk often contains only one volume, the terms disk and volume are frequently used interchangeably.

Section 2: Getting Started With DiskExpress II

The DiskExpress II Control Panel document has two functional parts. The operational portion of DiskExpress II performs all activities with hard disks, and is normally loaded into memory at startup time. The user control portion of DiskExpress II is loaded into memory when its icon is opened.

The first time DiskExpress II is started from a disk, it will display a "Welcome" dialog asking you to confirm that you have read the "Read Before Using DiskExpress!" document and this manual. If you answer the dialog affirmatively, the dialog will not be displayed on subsequent restarts.

To begin working with DiskExpress II:

1) Make a complete backup of your hard disk volumes and use DiskCheck to verify the directories and media of those volumes. Follow the instructions provided by DiskCheck to correct any errors found in the volumes. Refer to Chapter 5, **DiskCheck**.

2) Before DiskExpress II will begin monitoring file usage and automatically optimizing, DiskExpress II must be turned on. Under System 6, choose the Control Panel desk accessory from the Apple menu and then click the DiskExpress II icon to display its Control Panel. (If necessary, use the scroll bar to bring the DiskExpress II icon into view.) Under System 7, choose Control Panels from the Apple menu and double-click the DiskExpress II icon to display its Control Panel. (If necessary, use the scroll bar to bring the DiskExpress II icon into view.) Click the "On" button to turn DiskExpress II on.

DiskExpress II Will Now Perform:

1) **Automatic Monitoring and Recording Of File Usage**
DiskExpress II will automatically monitor and record all file usage in a log file on each eligible volume.

2) **Daily Analysis**
DiskExpress II will compute each volume's optimization index.

3) **Automatic Defragmentation and Optimization**
Using the results of the daily analysis, DiskExpress II will then automatically optimize each volume as needed.

Until DiskExpress II becomes familiar with your file usage it may have to work very hard to keep your volumes optimized. Optimization should take place very rapidly after a volume has been monitored for five or more days. Another way to decrease optimization time is to turn off the "verify before optimize" option in the DiskExpress II Control Panel. If your hard disk is not moved you may want to leave the "verify before optimize" option off.

Flashing DiskExpress II Icon in the Apple Menu

A blinking DiskExpress II icon displayed in place of the Apple icon in the Apple menu is an indication that DiskExpress II has a message to display. When you see this icon, you should open the DiskExpress II Control Panel to allow the message to be displayed.

How To Get Even More Out Of DiskExpress II

At this point you could simply let DiskExpress II automatically take excellent care of your disks. But we highly recommend that you take advantage of all the powerful yet easy-to-use features of DiskExpress II. To learn how to use these advanced features, just continue reading.

Additional options for DiskExpress II are available in the Control Panel. They are explained in Section 4, **DiskExpress II Option Settings**.

Section 3: The DiskExpress II Control Panel

This chapter describes, in detail, the DiskExpress II Control Panel. The DiskExpress II Control Panel is the command center for DiskExpress II. From the Control Panel, you can manage all of the automatic and manual features of DiskExpress II. All settings made in this window are "remembered" between startups.

Opening the DiskExpress II Control Panel

To open the DiskExpress II Control Panel follow these 2 simple steps.

1) Choose the Control Panel desk accessory from the Apple menu under System 6 or choose Control Panels from the Apple menu under System 7.

2) Click the DiskExpress II icon to display its Control Panel under System 6 or double click the icon under System 7. (If necessary, use the scroll bar to bring the DiskExpress II icon into view.)

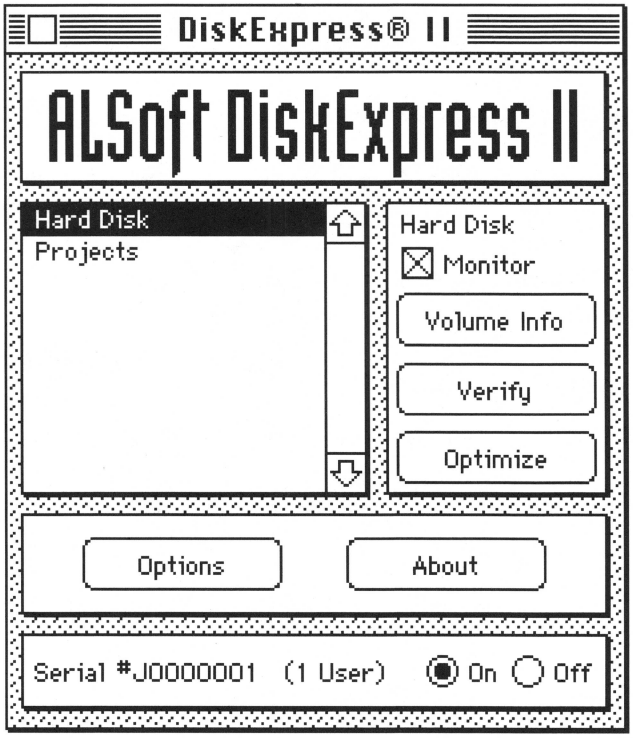

Figure 2-5
The DiskExpress II Control Panel

The following items appear in the DiskExpress II Control Panel:

Volume List

The Volume List shows a complete list of all eligible volumes and diskettes currently available to the Macintosh.

Rabbit Icon Preceding A Volume Name
If a volume name is preceded by a rabbit icon then it is currently undergoing automatic optimization.

Selecting Volumes
Volumes in the volume list can be selected by clicking a volume name. Clicking a volume name highlights it and a copy of the name is displayed over the Monitor check box indicating that DiskExpress II is currently set to work with the volume.

Ineligible Volumes
Volumes that are not eligible to be worked with will not be shown in the list. Some examples of volumes that are not eligible are AppleShare and TOPS volumes which you access via a network.

On/Off buttons

If DiskExpress II has been successfully loaded, these radio buttons can be used to start or stop its operations. This includes all file activity logging and automatic optimization. The installation default setting is "off". To stop active optimization, open the DiskExpress II Control Panel, click on the appropriate volume, click the Status button, and click Stop. A shortcut: open the DiskExpress II Control Panel and turn DiskExpress II off and then on again.

Volume Info button

When this button is clicked, DiskExpress II will display a Volume Information window for the selected volume. The Volume Information window (described in Section 5, **Volume Information Display**) contains the Fragmentation Display, File Activity Display and Volume Statistics.

Status button

If the selected volume is undergoing automatic optimization (its name is preceded with a rabbit icon), the Volume Info button changes to a Status button. When the Status button is clicked, DiskExpress II will present a dialog that displays a progress indicator, a Stop button, and a Close button.

Clicking the Stop button will close the dialog and stop the current operation. Automatic optimization of the selected volume will not resume until the next day or 5 minutes after the next restart. Clicking the Close button closes the dialog without stopping the current operation.

Verify button

Clicking this button causes DiskExpress II to verify the selected volume's media by performing a sequential "read" of the entire selected volume. DiskExpress II first presents a dialog that displays a progress indicator and a Stop button. The verify operation will continue until it either completes examination of the selected volume or you click the Stop button.

Optimize button

When this button is clicked, DiskExpress II will analyze all files and rearrange them based on their fragmentation and optimization priority. DiskExpress II first presents a dialog that displays a progress indicator and a Stop button. This operation is not performed in the background as when DiskExpress II optimizes automatically. The Optimize operation will continue until it either completes optimization of the selected volume or you click the Stop button. When finished, all files, the directory and free space will be arranged in contiguous order on the volume. The physical order of files on the volume is determined by their priority.

You can start a background optimization manually by holding down the Option key while clicking the Optimize button. It is not a good idea to start a background optimization on a volume you are currently modifying, since background optimization will stop if the volume being optimized is modified, ejected or removed from the desktop. This includes renaming, copying, deleting or moving files located on that volume.

Automatic Volume Optimization

DiskExpress II will automatically analyze all files on an eligible volume and rearrange them based on their fragmentation and optimization priority. When finished, all files, the directory and free space will be arranged in contiguous order on the volume. The physical order of files on the volume is determined by their priority.

DiskExpress II has two operating methods of working with a volume:

1) **Automatic** - DiskExpress II optimizes each eligible volume whenever it is necessary. Priorities are based on at least five days of activity.

2) **Manual** - DiskExpress II immediately optimizes the selected volume including files, the directory and free space. Diskettes can be optimized using this method. Priorities are also based on at least the last five days of activity. If five days of activity are not recorded, such as when DiskExpress II is first installed or when working with a diskette, files are prioritized according to a fixed default priority setting.

Note About Networks and Backup Applications: Both methods of optimization are 100% compatible with files servers, such as AppleShare, File Share and TOPS, as well as with all backup applications.

Determining File Prioritization

The priority for physical placement of files on each volume is determined by an analysis of its log file which is maintained by DiskExpress II. All files are first classified as either "anchored" or "movable".

Two Basic Classifications of Files:

1) **Anchored Files**. Anchored files are files such as copy protection files, open virtual memory files, many invisible files, and most partitions. They must remain where they are physically located (anchored) on the disk and will be skipped by DiskExpress II. Certain programs create invisible files to store information they may need to access. DiskExpress II keeps a list of invisible files that are safe to move. This list is updated regularly.

Note About Partitions: DiskExpress II can only move MultiDisk and MultiPartition partition files that are closed (not visible on the desktop.) DiskExpress II assures that their invisible partition files are saved in contiguous space and that they are positioned correctly on the disk according to their priority. All other partition files are classified as anchored and will be skipped.

For Enhanced Virtual Memory Performance: Virtual memory storage files receive special treatment by DiskExpress II. If a virtual memory storage file is open, DiskExpress II will anchor it during optimization. However, DiskExpress II will optimize a closed virtual memory storage file by defragmenting it and moving it to the first allocation block following the volume directory. To allow DiskExpress II to optimize your virtual memory storage file you should start your computer with virtual memory turned off. Then turn virtual memory on and set the amount of virtual memory you want. Next, without restarting the computer, optimize the volume containing the virtual memory storage file. Finally, restart the computer.

The virtual memory storage file created by Connectix' Virtual program is given the same special consideration that is given to the System 7 virtual memory storage file.

2) **Movable Files**. Movable files are files which can be analyzed and given one of the following priorities based on their usage for at least the previous five days:

   a) Active: files that were used frequently but did not change size such as system files and applications or files that did change size such as word processing, spreadsheet, and database files;
   b) Sporadic: files that were used occasionally but did not change size. Examples of sporadic files are utility programs, word processing and spreadsheet templates;
   c) Dormant: files that have not been used recently.

If No Anchored Files Are On A Volume

If a volume has no anchored files on it, DiskExpress II will arrange your files according to their priority. Files on the volume will be arranged in the following order:

1) Volume Directory
2) Active Files
3) Free Space
4) Sporadic Files
5) Dormant Files

Verify Volume

The Verify operation verifies a volume's media by performing a sequential "read" of the entire selected volume. This operation does not change any information on the volume. If a portion of the volume is unreadable, an error message will be displayed. Refer to Section 7, **Trouble-Shooting And Error Messages**.

☒ Monitor

Monitor check box

If this option is checked, DiskExpress II will automatically monitor and record in a log file all file activity on the selected eligible volume. If the Monitor All Volumes option is on, you will not be able to turn off this option for any selected volume. A volume which is not monitored cannot be optimized automatically. Also, diskettes cannot be monitored nor optimized automatically.

Options button

Click this button to open a window that displays the settings that are available to customize DiskExpress II. Refer to Section 4, **DiskExpress II Options Settings** for more information about these settings.

About button

Click this button to open a window which will provide information about DiskExpress II's release number, copyright information, and phone numbers for sales and support.

Section 4: DiskExpress II Options Settings

Clicking the Options button in the DiskExpress II Control Panel displays the settings that are available to customize DiskExpress II.

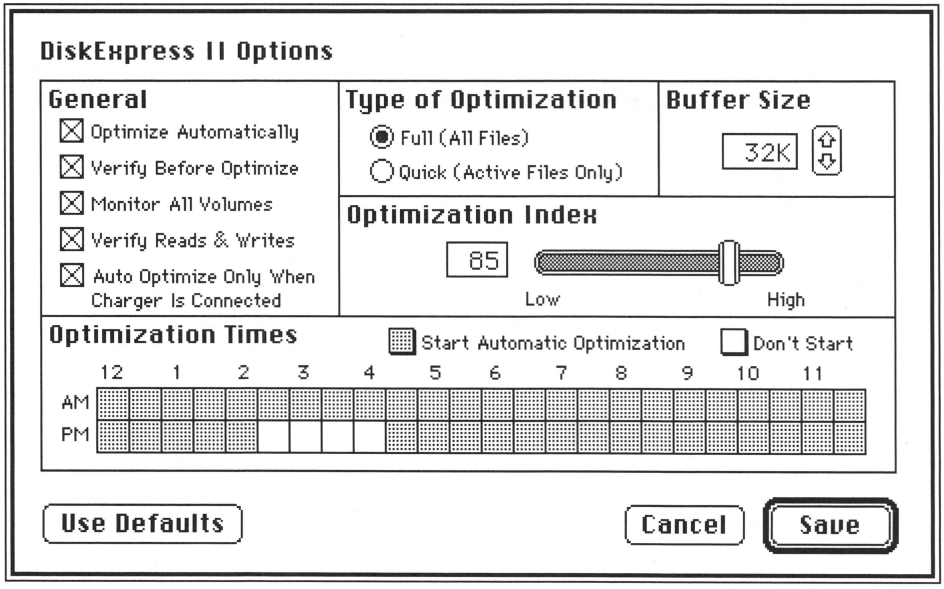

Figure 2-6
Options Dialog

General Options

The General options allow you to specify the settings for verification and optimization.

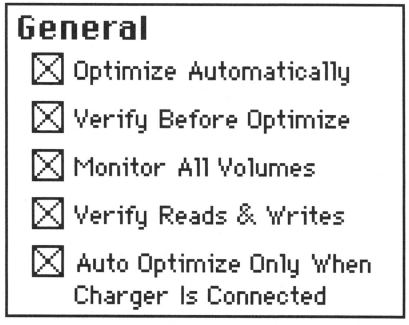

Figure 2-7
Options for Optimization

Optimize Automatically check box

Choosing the Optimize Automatically option signals DiskExpress II to automatically optimize all monitored volumes when necessary. The installation default setting for this check box is checked (on.)

Verify Before Optimize check box

Choosing this option will automatically verify a volume prior to optimizing it. This is true whether the volume is being optimized automatically or manually. The installation default setting for this check box is checked (on.)

Monitor All Volumes check box

Checking this option tells DiskExpress II to monitor and record in a log file all file activity on all eligible volumes. If DiskExpress II encounters an eligible volume for which no logging has occurred, it will automatically create a log file and commence logging. The installation default setting for this check box is checked (on.)

Verify Reads & Writes check box

If this option is selected, every read and write operation will be tested using a proprietary verification process. A proprietary method was chosen because the verification process that is built into the Macintosh Operating System is not supported by any of the hard disks that we have tested (including those from Apple.)

DiskExpress II is shipped with the Verify Reads & Writes box checked. Although optimization times will be increased by about 50% and media verification times will increase by about 100%, it is highly recommended that this box remain checked during all optimizations. Failure to leave this box checked will reduce the ability of DiskExpress II to maintain the integrity of your data. DiskExpress II recognizes bad blocks that have been marked by Sector Collector, Norton Utilities, and MacTools, as well as the System 7 bad block sparing mechanism that was mentioned previously. Optimization and media verification will operate around these spared bad blocks.

Auto Optimize Only if Battery Charger is Connected

This option is for Macintosh Portable and PowerBook users only and will not appear on any other type of Macintosh. Checking this box will stop DiskExpress II from automatically optimizing whenever the Macintosh is disconnected from its battery charger, thereby conserving battery power. Automatic optimization will not occur regardless of any other settings if this check box is checked and if your Macintosh is not connected to a battery charger.

Choose the Type of Optimization You Prefer

You can specify whether you want DiskExpress II to optimize your entire hard disk (Full) or only those files that are active (Quick.) Using Quick Optimization, DiskExpress II optimizes only the most frequently used files on a selected volume. It will skip sporadically used and dormant files (which account for the bulk of most users' files), so optimization takes less time.

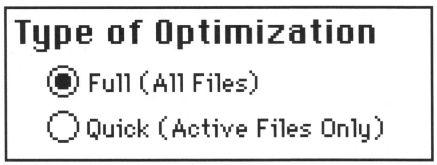

Figure 2-8
Type of Optimization Radio Buttons

Changing The Buffer Size

The section of memory DiskExpress II uses to move files from one portion of the volume to another is called the buffer. The buffer size only applies to background optimization (and verification if chosen), i.e., automatic or manual background optimization. For foreground optimization, the buffer size is allocated dynamically based upon available memory up to 1 MB. The amount of memory you set for the buffer is reserved at startup.

You can change the size of the buffer by using the arrow buttons to increase or decrease the number. The larger the buffer is, the faster DiskExpress II will optimize your volumes. However, a large buffer may slow down other activity in the foreground. You may want to experiment to see what buffer size works best for your Macintosh configuration.

Figure 2-9
Buffer Size Setting

Note: You must restart your machine after changing the buffer size to guarantee that DiskExpress II can reserve the appropriate amount of memory.

Optimization Index

The Optimization Index is a measure of the current state of optimization of a volume. Using this control, you can specify the amount of fragmentation and file misplacement you are willing to accept before automatic optimization should be scheduled.

Index values range from 1 to 100. A higher value indicates a higher degree of optimization while a lower value indicates a lesser degree of optimization. The lower the value, the less often DiskExpress II will automatically optimize. At the highest setting, 100, DiskExpress II will schedule optimization when any fragmentation and file misplacement is found. However, automatic optimization of a volume will never occur more than once per day.

The optimization index is computed for each volume independently. For example, if you have the index set to 80 and your startup volume has a computed index of 95, DiskExpress II will bypass that volume and advance to compute the index of the next volume. If that volume has a computed index of less than 80, it will be scheduled for automatic optimization.

The optimization index is computed periodically, therefore automatic optimization is not scheduled the moment a volume falls below the index. The three factors DiskExpress II takes into account when determining this index are file location, fragmentation and file activity. You may want to experiment with the Optimization Index to see what degree of optimization works best for you.

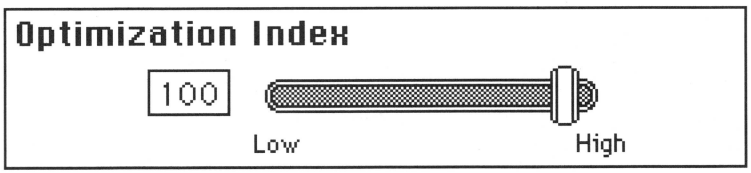

Figure 2-10
Optimization Index Slide Control

Note: The Optimization Index is computed differently if Quick optimize is turned on. In this case, sporadic and dormant files will not be considered when DiskExpress II computes the optimization index.

Note: The Optimization Index is not valid for a volume unless it has been optimized at least one time by DiskExpress II 2.10 or greater.

Time of Day for Optimization

The Optimization time allows you to set the times of day in half-hour increments during which automatic optimization for scheduled volumes can begin. The time can be set in 30 minute increments by simply clicking on the appropriate box. Be sure to allow enough time for all of the selected volumes to be optimized (and verified if you have selected this option.)

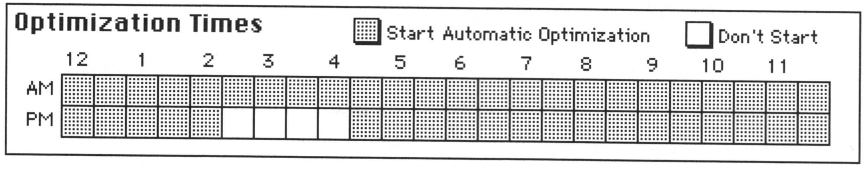

Figure 2-11
In this example, Automatic Optimization
cannot begin between 2:30 p.m. and 4:30 p.m.

A filled box indicates that automatic optimization may begin during that time, a white box indicates that automatic optimization may not begin during that time period. DiskExpress II will begin optimization (and verification) during the time you have set only when there is no disk activity with which optimization would interfere.

Section 5: The Volume Information Window

DiskExpress II can display two types of volume information – fragmentation and file activity. This chapter includes instructions on how to access and understand the Volume Information window.

Accessing the Volume Information Window

Select the volume to be displayed from the volume list in the DiskExpress II Control Panel and click the Volume Info button. DiskExpress II opens the Volume Information window. The window initially contains the Fragmentation Display for the selected volume.

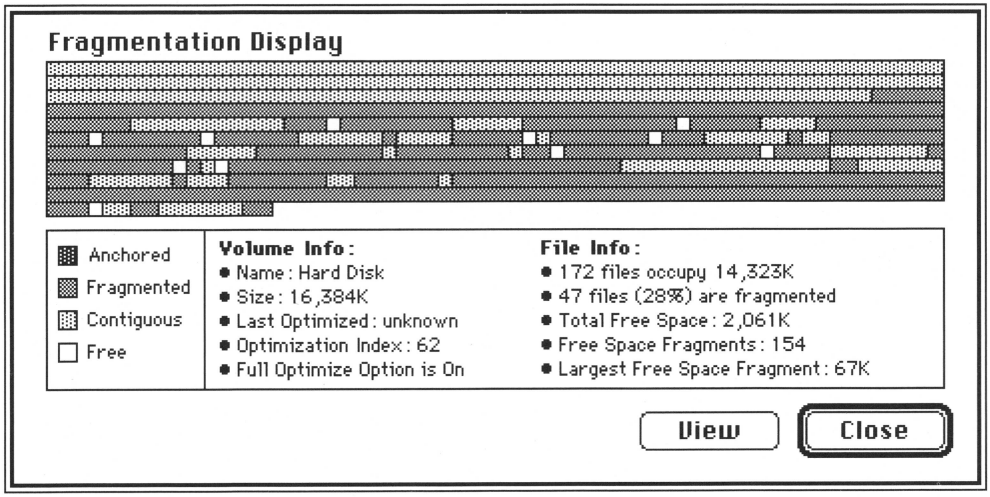

Figure 2-12
Fragmentation Display and Volume Statistics

The Fragmentation and File Activity Displays each contain a map of the relative locations of files on the selected volume. The displays can be thought of as a series of squares running from left to right and top to bottom with each square representing a section of 25 contiguous blocks on the volume. Each square is assigned a pattern reflecting the state of the files occupying that square's blocks.

A legend of the patterns and relevant volume and file statistics are located below the volume map. The map and statistics combine to give you a complete picture of the efficiency of the volume.

In the lower right corner of the Volume Information window are two buttons: Close and View. Clicking the Close button closes the Volume Information window and returns you to the DiskExpress II Control Panel. Clicking the View button alternates between the Fragmentation Display and the File Activity Display.

Understanding the Fragmentation Display

The Fragmentation Display maps the locations of files of differing degrees of fragmentation. Optimally, all files and the free space will be contiguous.

The patterns used in the Fragmentation Display are shown in Figure 2-13. Each square of the volume map may represent files with different degrees of fragmentation. The pattern assigned to a square is selected according to the following ranking: 1) Orphaned, 2) Anchored, 3) Fragmented, 4) Contiguous, and 5) Free. For example, if a square represents 5 contiguous files and 1 fragmented file the square will be assigned the pattern for fragmented.

Figure 2-13
Fragmentation Display Pattern Legend

Orphaned

The areas of the Fragmentation Display drawn with this pattern represent the areas on the volume occupied by an orphaned extent. When the directory of a volume contains a record pointing to a fragment whose parent file can not be found, the fragment is said to be an "orphaned extent".

An orphaned extent is a common form of directory damage. If DiskExpress II reports encountering an orphaned extent during an optimization, or if the Fragmentation Display shows an area of your volume containing an orphaned extent, you may use DiskCheck, the directory diagnostics program shipped with DiskExpress II, to make repairs. Refer to Chapter 5, **DiskCheck**.

The Orphaned Pattern in the Fragmentation Display Pattern Legend is not present unless an orphaned extent has been found on the volume.

Anchored
The areas of the Fragmentation Display drawn with this pattern represent the areas on the volume occupied by an anchored file. DiskExpress II anchors a file if it should not be moved during optimization. Examples of anchored files include: copy protected programs, active virtual memory files, some types of partition files, and many invisible files. A file is not necessarily considered anchored because it is locked, opened or invisible.

During optimization, DiskExpress II may surround an anchored file with a file prioritized to be placed in the physical area of the anchored file. This is done to eliminate any free space fragments even though it may result in the surrounding file being fragmented around the anchored file.

Fragmented
The areas of the Fragmentation Display drawn with this pattern represent the areas on the volume occupied by a fragmented file. A file is said to be fragmented when it is not stored in contiguous physical space on the volume.

Contiguous
The areas of the Fragmentation Display drawn with this pattern represent the areas on the volume occupied by a contiguous file. A file is said to be contiguous when it is stored in adjacent physical space on the volume.

Free
The areas of the Fragmentation Display drawn with this pattern represent the areas on the volume that are unoccupied.

Understanding the File Activity Display

The File Activity Display maps the locations of files of differing degrees of activity. Optimally, files with the same activity will be grouped together on a volume. Clicking the View button in the Volume Information window will alternate between the Fragmentation and File Activity Displays.

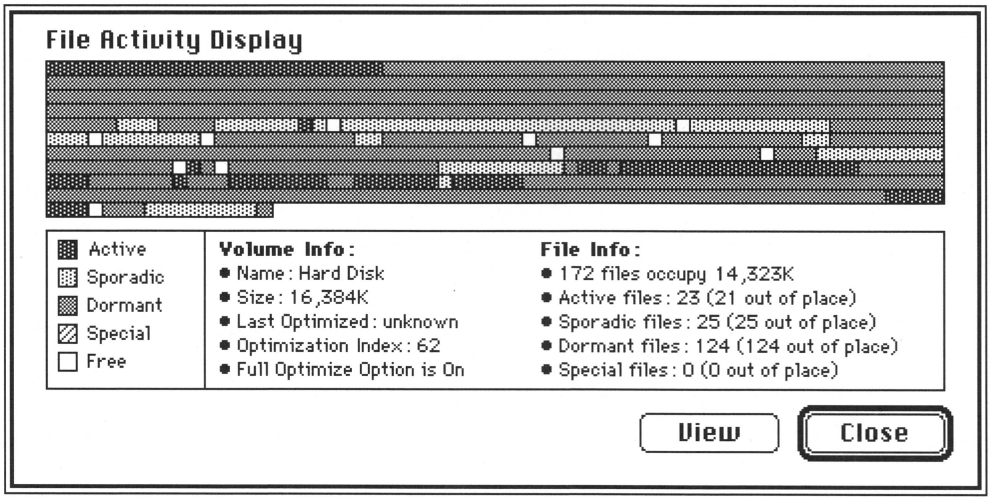

Figure 2-14
File Activity Display

The patterns used in the File Activity Display are shown in Figure 2-15. Each square of the volume map may represent files with different degrees of activity. The pattern assigned to a square is selected according to the following ranking: 1) Special, 2) Active, 3) Sporadic, 4) Dormant, and 5) Free. For example, if a square represents 5 sporadic files and 1 active file, the square will be assigned the pattern for active.

Figure 2-15
File Activity Pattern Legend

Orphaned
The areas of the File Activity Display drawn with this pattern represent the areas on the volume occupied by an orphaned extent. When the directory of a volume contains a record pointing to a fragment whose parent file can not be found, the fragment is said to be an "orphaned extent".

An orphaned extent is a common form of directory damage. If DiskExpress II reports encountering an orphaned extent during an optimization, or if the Fragmentation Display shows an area of your volume containing an orphaned extent, you may use DiskCheck, the directory diagnostics program shipped with DiskExpress II, to make repairs. Refer to Chapter 5, **DISKCHECK**.

The Orphaned Pattern in the File Activity Display Pattern Legend is not present unless an orphaned extent has been found on the volume.

Special
The areas of the File Activity Display drawn with this pattern represent the areas on the volume occupied by a special file. A file is said to be special if its prioritized location on the disk is determined by it type rather than its activity. Examples of files considered to be special are open partition files and most anchored files.

Active
The areas of the File Activity Display drawn with this pattern represent the areas on the volume occupied by an active file. A file is considered active if it is read from or written to on a frequent basis or if it has recently changed size.

Sporadic
The areas of the File Activity Display drawn with this pattern represent the areas on the volume occupied by a sporadic file. A file is said to be sporadic when it has not recently changed size and is only read from or written to occasionally.

Dormant
The areas of the File Activity Display drawn with this pattern represent the areas on the volume occupied by a dormant file. A file is said to be dormant when there has been no recent read or write activity for the file.

Free
The areas of the File Activity Display drawn with this pattern represent the areas on the volume that are unoccupied.

Volume Statistics

The following statistics are present for both the Fragmentation and File Activity Displays:

1) The name of the volume.
2) The total size of the volume, in K.
3) The date the volume was last optimized. If the volume is not being monitored by DiskExpress II, then the date cannot be shown.
4) The current Optimization Index of that volume. The index will vary depending on the type of optimization chosen for that volume (Quick or Full.)
5) The type of Optimization to be used on the volume (Quick or Full.)
6) The total number of files on the volume (some of which may be invisible) and the total amount of space, in K, they occupy.

The following statistics are shown only in the Fragmentation Display:

1) The number of fragmented files and the percentage of the total number of files on the volume they represent.
2) The total amount of free space, in K.
3) The number of sections into which free space is fragmented.
4) The largest single, contiguous section of free space, in K.

The following statistics are shown only in the File Activity Display:

1) The number of Active files on the volume and the number out of place.
2) The number of Sporadic files on the volume and the number out of place.
3) The number of Dormant files on the volume and the number out of place.
4) The number of Special files on the volume and the number out of place.

Section 6: Quick Reference

When Is DiskExpress II Active?

DiskExpress II performs an automatic optimization of each volume no more than once per day. When DiskExpress II is performing an optimization it does not interfere with normal computer usage. If your hard disk is being accessed and you think DiskExpress II is optimizing, click the mouse button. If the hard disk activity does not suspend for 30 seconds then something else is accessing your hard disk. When DiskExpress II performs a manual foreground optimization, it continues until stopped or completed. Under several conditions DiskExpress II will wait for a period of time before beginning or continuing a background optimization. The conditions signalling DiskExpress II to pause are:

Initial delay after new calendar day or startup	5 minutes
Delay after mouse click or keyboard operation	30 seconds
Delay after serial port activity (such as a modem or non-AppleTalk printer)	10 seconds
Delay after an optimization is terminated by disk modification	15 minutes
Delay after an optimization is stopped by the user in the status dialog	Remainder of day or 5 minutes after next restart

Preventing DiskExpress II From Loading Into Memory On Startup

To temporarily stop DiskExpress II from loading into memory on startup, a "Startup Bypass" can be accomplished by holding down any of the Command, Option, or Shift keys while the Macintosh is starting. When any of these keys are detected, DiskExpress II will display its Not Loaded icon and not load into memory the operational portion of DiskExpress II.

Under these circumstances, even though you can work with the DiskExpress II Control Panel and turn it "on", the Macintosh must be restarted to resume DiskExpress II's logging and optimization operations.

Flashing DiskExpress II Icon in the Apple Menu

A blinking DiskExpress II icon displayed in place of the Apple icon in the Apple menu is an indication that DiskExpress II has a message to display. When you see this icon, you should open the DiskExpress II Control Panel to allow the message to be displayed.

Stopping an Automatic Optimization

Interrupting DiskExpress II while it is automatically optimizing a volume can be accomplished by first opening the DiskExpress II Control Panel. Next, select the volume name which has the rabbit icon next to it and then click the Status button. This displays a progress indicator and a Stop button. Click the Stop button. Automatic optimization of the volume will resume the next day or 5 minutes after the next restart. Turning off the DiskExpress II Control Panel causes all operations to cease.

Selecting Specific Volumes

The Volume List shows the name of all eligible volumes and diskettes currently available to the Macintosh. You may select a volume to work with by clicking its name in the list. When selected, the volume name will highlight and be displayed over the Monitor check box to the right, indicating that DiskExpress II is currently set to work with it. Volumes that are not eligible to be worked with will not be shown in the list.

Verifying A Volume

To verify that a volume can be read without problems, select the volume you want to work with, then click the Verify button. When this button is clicked, DiskExpress II will sequentially read and check all blocks on that volume. A status dialog displays a progress indicator and a Stop button.

Turning Off Automatic Optimization For All Volumes

To stop DiskExpress II from automatically optimizing all volumes, uncheck the Optimize Automatically check box located in the Options dialog. This prevents DiskExpress II from automatically optimizing all monitored volumes. Any automatic optimization that is currently active will continue until it has finished or until you tell DiskExpress II to halt the operation. Read the section entitled "Stopping an Automatic Optimization".

Turning Off Automatic Optimization For A Single Volume

To stop DiskExpress II from automatically optimizing a single volume you must stop automatic recording on that volume. Read the section entitled "Turning Off Automatic Recording Of A Single Volume".

Turning Off Automatic Recording Of All Volumes

To stop DiskExpress II from automatically recording file activity on all volumes, first uncheck the Monitor All Volumes check box (located in the Options dialog box.) Next, for each volume, select its name from the volume list in the DiskExpress II Control Panel and uncheck the Monitor check box. This stops DiskExpress II from automatically monitoring and recording all file activity on all eligible volumes.

Turning Off Automatic Recording Of A Single Volume

To stop DiskExpress II from recording file activity on a single volume, first be sure that the Monitor All Volumes check box (located in the Options dialog box) is unchecked. Next, select the volume from the volume list and uncheck the Monitor check box in the DiskExpress II Control Panel. This action will stop automatic monitoring and recording of all file activity in the log file of the selected volume. This action also prevents the volume from being automatically optimized.

To Stop Everything Temporarily

To temporarily stop all DiskExpress II operations on all volumes, click the Off button. All file logging and optimization operations will stop immediately. To resume full operation at any time, click the On button.

To Enhance Virtual Memory Performance

Virtual memory storage files receive special treatment by DiskExpress II. If a virtual memory storage file is open, DiskExpress II will anchor it during optimization. However, DiskExpress II will optimize a closed virtual memory storage file by defragmenting it and moving it to the first allocation block following the volume directory. To allow DiskExpress II to optimize your virtual memory storage file you should start your computer with virtual memory turned off. Then turn virtual memory on and set the amount of virtual memory you want. Next, without restarting the computer, optimize the volume containing the virtual memory storage file. Finally, restart the computer. The virtual memory storage file created by Connectix' Virtual program is given the same special consideration that is given to the System 7 virtual memory storage file.

To Enhance Partition Performance

Partition files created by MultiDisk and MultiPartition receive special treatment by DiskExpress II. If a partition file is open (the partition's volume icon is visible on the desktop), DiskExpress II will anchor it during optimization. However, DiskExpress II will optimize a closed partition file by defragmenting it and moving it to the correct position on the disk according to its priority. To allow DiskExpress II to optimize your partition files you should close all open partitions and optimize the volume on which the partitions were created. This procedure does not optimize the contents of your partitions. The partition contents should be optimized separately.

Note: To temporarily stop DiskExpress II from loading, hold down the Command, Shift or Option key during startup.

Section 7: Trouble-Shooting And Error Messages

Trouble-Shooting

If after DiskExpress II is installed, your Macintosh begins behaving abnormally, you may be experiencing an "extension conflict". Extension conflicts are incompatibilities between software that extends your System, such as System extensions, Control Panels and Chooser extensions.

Typical conflict symptoms of a newly installed extension are:

1) Any extension startup icon is not displayed normally (indicating it could not load properly.)
2) Computer "stalls" during startup.
3) Screen freezing and/or mouse becomes inactive.
4) System errors.

Common sense rules for installing any extension into your System Folder:

1) Only add one (1) extension at a time.
2) Test the new extension.
3) Test your previously installed extensions.
4) Test your applications.
5) If no problems, install your next extension.

If none of the three (3) startup icons for DiskExpress II are displayed at startup and you have some type of extension management utility program (Aask, INIT Picker, INIT CDEV, Startup Manager, INIT Manager, etc.), verify that your utility has ENABLED DiskExpress II.

If you encounter any NEW difficulties after installing DiskExpress II, the following steps can be used to quickly identify the conflict or, in some cases, even eliminate it. Try each, one at a time, in order shown:

1) Verify that you are running System Software 6 or later. This can be done by choosing "About this Macintosh ..."(System 7) or "About the Finder..." (System 6) from the Apple menu while in the Finder. Both the Finder AND System versions must be 6 or greater. If you are running System Software 7 or greater you must use DiskExpress II release 2.07 or greater.
2) Reinstall DiskExpress II per Chapter 1 of this manual using the ORIGINAL DiskExpress II diskette. Restart your Macintosh and test.

3) Change the name of the DiskExpress II Control Panel, installed in your System Folder from "DiskExpress® II" to "aDiskExpress® II". This will let it start before most other extensions. Restart your Macintosh and test.
4) Change the name of the DiskExpress II Control Panel, installed in your System Folder, from "DiskExpress® II" to "zDiskExpress® II". This will let it start after most other extensions. Restart your Macintosh and test.
5) Move ALL non-Apple Computer extensions (including Control Panel devices) out of the System Folder except DiskExpress II. (They do not have to be thrown away, just moved outside of the System Folder.) Restart your Macintosh and test. If the conflict continues, go immediately to step 6. If this cures the conflict, start putting the moved extensions back into the System Folder one at a time. Restart your Macintosh and test after each one is moved back.
6) Reinstall your system files by restarting your Macintosh from the Apple Computer System Tools diskette (6.0 or later.) Open the System Folder on your hard disk and put the System file into the Trash. Empty the Trash. Start the "Installer" program on the System Tools disk and perform the appropriate system software installation. Restart your Macintosh and test. If this cures the conflict, start putting the moved extensions back into the System Folder one at a time. Restart your Macintosh and test after each one is moved back.

Note: Be sure to read the document "Read Before Using DiskExpress II." Last minute changes are detailed there.

Error Messages

Error messages are most likely to appear while performing a volume operation. A dialog box is displayed describing the nature of the error and, in some cases, a solution is suggested. The following are error messages that you might encounter.

❑ **DISKEXPRESS II SIMULTANEOUS USERS ERROR**

The number of simultaneous users of this copy of DiskExpress II has exceeded your network license.The network license for this copy of DiskExpress II allows (number of users) simultaneous user(s) Click the Users button to display a list of the current users of this copy of DiskExpress II.

DiskExpress II detected more copies of itself simultaneously running on the network than have been licensed. Clicking the Users button of this dialog will display available information about the current users of this copy of DiskExpress II. This information should help you locate the excessive user(s) so DiskExpress II can be removed from their startup disk.

This error condition is visually indicated by displaying the Not loaded icon at startup time and/or by alternately flashing a small DiskExpress II icon over top of the Apple in the menu bar.

You can easily verify that the Not Loaded error is caused by excessive copies of DiskExpress II running simultaneously on the network. Unplug the AppleTalk connector from the back of your Macintosh and then choose restart from the Finder's Special menu. DiskExpress II should now display the Loaded icon on startup. If it does not, and you have tried steps 1 and 2 of the section titled "Loading Problems. What Went Wrong?" in Chapter 1, **Installing ALSoft Power Utilities**, call the ALSoft support line at (713) 353-1510.

If one copy of DiskExpress II is insufficient to meet your needs, a network license is available for any number of users. A network package comes with one diskette licensed for a specific number of users. For more information, call the ALSoft sales line at 1-800-ALSOFT-1.

❑ **DISKEXPRESS INTERRUPTED ERROR**

DiskExpress II may have been interrupted while optimizing this volume. The file "file name" was the last file moved by DiskExpress II.

This error message appears after startup when DiskExpress II is interrupted during optimization. This occurs when you restart your Macintosh following a system crash or any other abnormal restart.

❑ **DIRECTORY DAMAGE ERROR**

DiskExpress II found errors in the directory of this volume. You can use the DiskCheck utility, included with DiskExpress, to determine the nature of the errors and the steps required to correct them.

This error message appears when DiskExpress II encounters an error while analyzing the directory before optimizing a volume. No data will have been moved by DiskExpress II at this point. To verify the directory of the named volume, use the DiskCheck utility that came on your DiskExpress II diskette. Refer to Chapter 5, **DiskCheck**.

❑ **DIRECTORY DAMAGE ERROR**

DiskExpress II found errors in the directory entry of the file "file name" on this volume. You can use the DiskCheck utility, included with DiskExpress, to determine the nature of the errors and the steps required to correct them.

This error message appears when DiskExpress II encounters an error while optimizing a volume. DiskExpress II will identify the name of the file which it was attempting to move when it encountered the error. To verify the directory of the named volume, use the DiskCheck utility that came on your DiskExpress II diskette. Refer to Chapter 5, **DiskCheck**.

❑ **UNABLE TO VERIFY MEDIA ERROR**

DiskExpress II was unable to read or write one or more blocks on this volume. You can use the DiskCheck utility included with DiskExpress to perform a complete media verification.

This error message appears when DiskExpress II is unable to read or write to a block during optimization. This could be indicative of a bad block on the hard disk, a hardware defect or problems with termination or cabling. You can use the DiskCheck utility included with DiskExpress to perform a complete media verification. Refer to Chapter 5, **DiskCheck**.

❑ **UNABLE TO VERIFY BLOCK ERROR**

DiskExpress II was unable to verify (quantity) block(s) on this volume. You can use the DiskCheck utility included with DiskExpress to perform a complete media verification.

This error message appears when DiskExpress II is unable to read or write to a block during verification. This could be evidence of a bad block on the hard disk, a hardware defect or problems with termination or cabling. You can use the DiskCheck utility included with DiskExpress to perform a complete media verification. When performing this operation select the volume and check the verify media check box and the continuous test check box. Click the start button and allow DiskCheck to go through at least three passes of the volume (this may take a few minutes to a few hours.) If DiskCheck reports bad blocks make a note of the block number. If DiskCheck reports the same bad block number through multiple passes, this is evidence of a bad block on the volume. If different numbers appear to be bad on multiple passes, this could be evidence of a hardware defect, or SCSI termination or cable problems.

❑ **BLOCK VERIFICATION ERROR**

During verification, one or more blocks on this volume required a total of (number) additional attempts to verify. Use the DiskCheck utility included with DiskExpress to perform a complete media verification.

This error message appears when DiskExpress II is unable to read or write to a block during verification. This could be evidence of a bad block on the hard disk, a hardware defect or problems with termination or cabling. You can use the DiskCheck utility included with DiskExpress to perform a complete media verification. When performing this operation select the volume and check the verify media check box and the continuous test check box. Click the start button and allow DiskCheck to go through at least three passes of the volume (this may take a few minutes to a few hours.) If DiskCheck reports bad blocks make a note of the block number. If DiskCheck reports the same bad block number through multiple passes, this is evidence of a bad block on the volume. If different numbers appear to be bad on multiple passes, this could be evidence of a hardware defect, or SCSI termination or cable problems.

❑ **BLOCK VERIFICATION ERROR**

During verification, one or more blocks on this volume failed to verify after a total of (number) additional attempts. Use the DiskCheck utility included with DiskExpress to perform a complete media verification.

This error message appears when DiskExpress II is unable to read or write to a block during verification. This could be evidence of a bad block on the hard disk, a hardware defect or problems with termination or cabling. You can use the DiskCheck utility included with DiskExpress to perform a complete media verification. When performing this operation select the volume and check the verify media check box and the continuous test check box. Click the start button and allow DiskCheck to go through at least three passes of the volume (this may take a few minutes to a few hours.) If DiskCheck reports bad blocks make a note of the block number. If DiskCheck reports the same bad block number through multiple passes, this is evidence of a bad block on the volume. If different numbers appear to be bad on multiple passes, this could be evidence of a hardware defect, or SCSI termination or cable problems.

❑ **BLOCK VERIFICATION ERROR**

During optimization, one or more blocks on this volume required a total of (number) additional attempts to verify. Use the DiskCheck utility, included with DiskExpress, to perform a complete media verification.

This error message appears when DiskExpress II is unable to read or write to a block during optimization. This could be evidence of a bad block on the hard disk, a hardware defect or problems with termination or cabling. You can use the DiskCheck utility included with DiskExpress to perform a complete media verification. When performing this operation select the volume and check the verify media check box and the continuous test check box. Click the start button and allow DiskCheck to go through at least three passes of the volume (this may take a few minutes to a few hours.) If DiskCheck reports bad blocks make a note of the block number. If DiskCheck reports the same bad block number through multiple passes, this is evidence of a bad block on the volume. If different numbers appear to be bad on multiple passes, this could be evidence of a hardware defect, or SCSI termination or cable problems.

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❑ **DIRECTORY CANNOT BE READ**

During verification, this volume's directory could not be read to determine if any known bad blocks have been "spared." Use the DiskCheck utility, included with DiskExpress, to perform a complete directory and media verification.

This error message appears when DiskExpress II is unable to read or write to a block during verification. This could be evidence of a bad block on the hard disk, a hardware defect or problems with termination or cabling. You can use the DiskCheck utility included with DiskExpress to perform a complete media verification. When performing this operation select the volume and check the verify media check box and the continuous test check box. Click the start button and allow DiskCheck to go through at least three passes of the volume (this may take a few minutes to a few hours.) If DiskCheck reports bad blocks make a note of the block number. If DiskCheck reports the same bad block number through multiple passes, this is evidence of a bad block on the volume. If different numbers appear to be bad on multiple passes, this could be evidence of a hardware defect, or SCSI termination or cable problems.

❑ **UNEXPECTED ERROR**

DiskExpress II encountered an unexpected error and cannot complete the current operation. If you report this error, mention the number (error number.)

This error message appears when DiskExpress II encounters an unusual error. Make note of the error number (including whether the number was negative or positive) and restart your Macintosh. If DiskExpress II reports this error again, please contact Customer Support at (713) 353-1510.

❑ **VOLUME EJECTED/REMOVED ERROR**

Verification was stopped because the volume was ejected or removed from the desktop.

This error message appears when DiskExpress II is verifying the named volume and the volume is ejected, removed from the desktop or modified by some other program. This message only appears when the Status window is open.

❑ **VOLUME EJECTED/REMOVED/MODIFIED ERROR**

Optimization was stopped because the volume was ejected, removed from the desktop or modified by another application.

This error message appears when DiskExpress II is optimizing the named volume and the volume is ejected, removed from the desktop, or modified by some other program. This message only appears when the Status window is open. Examples of other applications that can cause this message are applications which work in the background such as OnLocation, AutoDoubler, or File Share.

❑ **OPERATION CANCELED - VOLUME IS LOCKED**

The operation being performed on this volume was canceled. This volume is locked.

This error message appears when DiskExpress II attempts to optimize a volume that is locked. Unlock the volume and retry.

❑ **OPERATION CANCELED - VOLUME IS FULL**

The operation being performed on this volume was canceled. This volume is full.

This error message appears when DiskExpress II attempts to optimize a volume that is full. Remove data to free disk space and retry.

❑ **OUT OF MEMORY**

There is not enough memory to complete the operation on this volume. If appropriate try closing any open desk accessories or turning off (or down) any RAM caches.

This error message appears when you try to verify or optimize and there is not sufficient memory available to perform the operation. Try closing any open applications or Desk Accessories and retry.

❑ **TOO MANY FILES OPEN**

There are too many files open to optimize this volume. You can use the Set File Count utility included with DiskExpress II to increase the number of files allowed to be open.

By default, the Macintosh can have a total of forty (40) files open at one time. Forty files may seem like a lot but, in addition to those files that you open, files are opened by applications and by the Macintosh system software. You may exceed the forty file limit when opening files, printing, or opening partitions. Included with DiskExpress II is a utility called Set File Count which allows you to increase the number of files that can be opened.

The maximum number of files allowed to be open is determined by your Macintosh startup disk. Use Set File Count to modify your startup disk and then restart with that disk.

❑ **PORTABLE POWER SUPPLY ERROR**

The automatic operation being performed on this volume was stopped because the battery charger was disconnected.

This message can only appear for Macintosh Portable and PowerBook users and only if the "Auto Optimize Only When Battery Charger is Connected" option is checked in the DiskExpress II Options dialog. When checked, DiskExpress II will stop an automatic optimization whenever the Macintosh is disconnected from its battery charger, thereby conserving battery power. Automatic optimization will not occur regardless of any other settings if this check box is checked and if your Macintosh is not connected to a battery charger.

❑ **DISKEXPRESS II UNABLE TO SAVE CHANGES**

DiskExpress II was unable to save changes. Check to see if the startup volume is locked. (error number)

If your volume is not locked, try throwing the DiskExpress II Preferences file from your System Folder into the trash, empty the trash and then restart you Macintosh.

❑ **DISKEXPRESS II UNABLE TO SAVE OPTIONS CHANGES**

DiskExpress II was unable to open its preference file. Option settings shown may be defaults. Changes to the Option settings cannot be saved.

Try throwing the DiskExpress II Preferences file from your System Folder into the trash.

❑ **SYSTEM INCOMPATIBILITY ERROR**

Optimization of this volume was canceled due to a conflict with a System Extension or an incompatibility with the current System Software.

This error message appears when DiskExpress II determines that one or more of its system software extensions is not functioning properly. Follow the steps at the beginning of this chapter that detail resolving extension conflicts.

❑ **TOPS IS INSTALLED**

Tops is installed on this computer and is preventing DiskExpress II from optimizing automatically. You must make Tops start up before DiskExpress by renaming the file "Tops" to "aTops".

TOPS is a system extension located in the System Folder of your Macintosh. An extension conflict with DiskExpress II requires that TOPS be loaded into memory before DiskExpress II. Renaming TOPS to aTOPS will change the loading order. Alternatively you can change the loading order with an extension manager such as INIT Picker, INIT CDEV, Startup Manager or INIT Manager.

❑ **DISKEXPRESS II UNABLE TO LOAD AT STARTUP**

DiskExpress II was unable to load properly at startup time.

See Chapter 1, **INSTALLING ALSoft Power Utilities** for information about loading problems.

❑ **DISKEXPRESS II CORRUPTED ERROR**

This copy of DiskExpress II is corrupted. Please replace it with a copy from your original disk.

Portions of the DiskExpress II Control Panel have been damaged. Deinstall and reinstall DiskExpress II as described in Chapter 1, **INSTALLING ALSoft Power Utilities.**

❑ **COMPATIBILITY ERROR**

This DiskExpress II Control Panel is not compatible with the currently loaded version of DiskExpress II. Please make sure you have only one copy of DiskExpress II in your System Folder.

❑ **MEMORY CORRUPTED ERROR**

Memory in use by DiskExpress II has been corrupted. This computer should be restarted immediately.

Upon getting this message, restart your computer immediately. If you continue to get this error, you could have an extension conflict. Follow the steps at the beginning of this chapter to resolve your extension conflict.

❑ **DATE DISCREPANCY ERROR**

DiskExpress II found a discrepancy between the last date this volume was monitored and the current date indicated by the clock.

This error message appears when DiskExpress II detects a manual change in the system date such as when the clock in the Control Panel is altered by moving the date backward. Indicate the correct date by clicking the appropriate button.

Chapter 3

MasterJuggler

Introduction

What is MasterJuggler?

MasterJuggler is the indispensable font suitcase and applications manager you will use everyday. It easily manages font suitcases, applications, sounds and desk accessories. MasterJuggler extends the power of your Macintosh by offering quick access to hundreds of TrueType and PostScript fonts, DAs, and sounds without having to install them in the system file. MasterJuggler's pop-up menus provide a convenient way to open, switch between, applications and documents. MasterJuggler saves valuable disk space through advanced font and sound compression, too. It has all the features of dozens of other popular utilities. MasterJuggler also has functions not found in any other Macintosh program.

Features:

- 100% System 7 compatible.
- Provides simultaneous access to hundreds of fonts, DAs, FKeys, and sounds without having to install them in your System file.
- Allows screen and downloadable PostScript® fonts to be used from folders other than the System Folder, even folders which are shared across most AppleTalk™ networks.
- Opens up to 120 files containing fonts, DAs, FKeys, and sounds on multiple volumes, including network file server volumes.
- Automatically reopens files after a restart.
- View the DAs, fonts, font faces, font sizes, FKeys, and sounds in a file before or after opening the file.
- Font Compression saves, on average, nearly 40% of the disk space occupied by fonts. Fonts are automatically decompressed as they are used.
- Sound Compression saves, on average, 20% of the disk space occupied by sounds. Sounds are automatically decompressed as they are played.
- MasterJuggler Pop-Up menu allows instant access to all MasterJuggler functions.
- Windows Pop-Up menu lets you bring to the front any selectable window in the currently open application. This includes windows hidden behind other windows.
- Application list and Application pop-up menu allow you to open an application or document from within any application without having to return to the Finder. In System 6 MultiFinder and System 7, the Application list and pop-up also allow you to switch to other open applications and to optionally hide the current application's windows before switching.
- DA list lets you open DAs and other Apple menu items from the keyboard.
- Font list allows viewing of all the current fonts in each of 9 styles and to assign a font as the default application font.

- FKey list lets you open FKeys from the keyboard by name with no numbering conflicts.
- Sound list allows you to play sounds and to choose a sound to play in place of the simple beep.
- FontShow™ lets you display or print a font or list of fonts in hundreds of size and style combinations.
- HotSounds™ allows you to assign sounds to many different Macintosh operations.
- KeyChains™ lets you open multiple applications or play multiple sounds with one command.
- ResConflicts™ shows and prints any name or number conflicts among the fonts, DAs, FKeys and sounds currently available.
- User definable Hot Keys™ gives you access to any MasterJuggler function from the keyboard.
- On-line help.
- Includes Juggler Utilities™ - a collection of indispensable font, DA, FKey, and sound utilities. Juggler Utilities includes Font/DA Utility™ to rename and renumber fonts and DAs, plus combine font family members or convert fonts to NFNT; FKey/Sound Mover™ to copy, rename, renumber, and remove FKeys and sounds; Resource Resolver™ to automatically resolve font and sound numbering conflicts; Sound Converter™ to play and convert any SoundCap™, SoundWave™, or SoundEdit™ files to Macintosh II or HyperCard™ sound suitcase files (which are playable by MasterJuggler.)
- Multiple User Versions available that allow up to 60 users to run one copy of MasterJuggler on an AppleTalk network concurrently.

Section 1: Basic Terms and Concepts

Before learning how to use MasterJuggler, you need to be familiar with the following terms:

Current Startup Disk
The startup disk whose system file the Macintosh is currently using. This disk is usually shown in the upper right corner of your Desktop.

Desk Accessory
Desk accessories, available from the Apple menu, are mini-applications you can use from within most applications. Desk accessories let you do things like calculations while you are working on a word processing document, choose the printer to use, and even keep a scrapbook full of your favorite illustrations or text you use in a variety of documents. Examples are the Calculator, Alarm Clock, and Scrapbook. Desk Accessories are also called accessories or DAs.

FKey
FKey is an acronym for "Function Key" (not the same as the F1-F15 function keys on the Apple Extended Keyboard.) Function keys are micro-applications that provide simple functions. They are invoked from the keyboard by holding down the Command and Shift keys while typing the number keys 0-9 (main keyboard only, not the keypad.) For example, pressing Command - Shift -1 will eject any floppy disk in drive 1. Command - Shift - 3 creates a TeachText document with the current contents of the screen. With only ten number keys, you can normally have only ten FKeys - four of which are already defined. With MasterJuggler, FKeys can be invoked from an FKey list (described elsewhere) which can contain an unlimited number of FKeys.

Font
In typography, a complete set of type in one size and style of character. In the Macintosh world, the term **font** usually refers to a complete set of type including all sizes and styles of character. An example of a font is Geneva.

Hot Keys
Keyboard Command key equivalents and modifiers assigned by the user as a shortcut to invoke a MasterJuggler function.

Pop-Up Menu
MasterJuggler employs menus that are activated by pressing a special key sequence and clicking the mouse button. The menu will "pop-up" (appear) near the current position of the mouse pointer, unless it is in the menu bar at the top of the screen. The menu will automatically adjust its display position according to its size and the space available between the pointer and the edges of the screen. Choosing from a pop-up menu is the same as choosing from a drop down menu in the menu bar.

Sound
Predefined noises that can be played through the Macintosh speaker. **Sounds** can be anything from a simple beep to an elaborate tune. There are four common types of sound files: SoundCap, SoundWave, SoundEdit, and resource (containing Macintosh II and HyperCard sound resources, which are both playable by MasterJuggler.)

Startup Disk
A disk that contains a System folder. Most people who have a hard disk use it as the **startup disk**.

Suitcase File
A file containing DA, font, FKey or sound system resources.

System File
A file Macintosh computers use to startup and to provide system-wide information and control.

System Folder
A folder that contains a System file and a Finder file. It also usually includes at least one printing resource, such as the ImageWriter, AppleTalk ImageWriter, or LaserWriter. You should also find other files in a **System Folder** - Scrapbook file, Clipboard file, and so on.

System Resource
Any system-wide information (such as DAs, fonts, FKeys, and sounds) which normally resides in the System file.

System Resource Names & Numbers
System resources have both names and numbers to identify them. For example, the name of the Geneva font is "Geneva" and its number is 3. You usually specify a system resource by name and need not be concerned about numbers. Occasionally two or more system resources will have the same (conflicting) names or numbers. MasterJuggler includes utilities to rename and renumber DAs, fonts, FKeys, and sounds to resolve conflicts. A special utility, Resource Resolver, is included with Juggler Utilities to automatically renumber fonts or sounds that have the same number.

System Sound
The sound the Macintosh makes whenever it wants to get your attention. By default, the **system sound** is a simple beep.

Section 2: Overview

MasterJuggler is a comprehensive utility that manages fonts, DAs, FKeys, sounds, applications, windows, and the playing of sounds. This chapter provides background information on each facet of MasterJuggler.

Resource Management

Fonts, DAs, FKeys, and sounds normally reside in the System files of your startup disks. The fonts, DAs, FKeys and sounds that you can work with depend upon which startup disk–that is which System file–your Macintosh is currently using. In this manual, fonts, DAs, Fkeys and sounds will collectively be referred to as system resources.

In addition to the System file, system resources can be stored in special font, DA, FKey, and sound suitcase files. The icons of these special system resource files are shown next in Figure 3-1.

Figure 3-1
Icons representing font, DA, FKey, and sound files

Unfortunately, there is no standard for FKey and sound suitcase icons, so you might come across files containing these system resources that have a different appearance.

One file can contain more than one type of resource. For example, a font file can contain both fonts and DAs. You can use the MasterJuggler View feature to find out which fonts, DAs, FKeys and sounds a file contains.

Without MasterJuggler, you cannot use fonts, DAs, FKeys and sounds stored in these files without first using the Font/DA Mover utility to copy those resources into the System file of the current startup disk. Also, there are limits on the maximum number of fonts, DAs, FKeys and sounds that can be placed into the System file.

MasterJuggler allows you to open up to 120 different suitcase files, making their contents available system-wide as though they had been copied into the System file. These files can be opened from folders other than the System folder and even shared across most AppleTalk networks.

Normally downloadable PostScript font files must be located in the System folder. MasterJuggler will cause the LaserWriter, Aldus, or other non-Apple PostScript drivers to search the System folder of the startup disk, followed by any folders containing suitcase files opened by MasterJuggler until the files are found. The folders can be on any disk, including a file server. One convenient way to use this feature is to place the downloadable PostScript font files for a particular font in the same folder that contains the corresponding font suitcase.

Once MasterJuggler has made new fonts, DAs, FKeys and sounds available, they can be accessed in a fairly normal fashion. New DAs are immediately shown in the Apple menu. New fonts are shown in the font menu of applications started after the file is opened by MasterJuggler.

There are some restrictions on the use of resources. For example, new fonts may not be available in the currently open applications. Depending on the application, it may be necessary to quit the application and reopen it to make it recognize the additional fonts.

FKeys can be invoked with Command-Shift-number keys if their resource numbers are between 0 and 9. All FKeys can be selected through the FKey list.

To make better use of system resources, MasterJuggler provides lists for DAs, fonts, FKeys, and sounds. The DA list lets you open DAs from the keyboard. The Font list allows you to view all the current fonts in each of 9 styles and to assign a font as the default application font. The FKey list lets you open FKeys from the keyboard by name with no numbering conflicts. The Sound list allows you to play sounds and to choose a sound to play in place of the simple beep.

Fonts are such an important component of the Macintosh that MasterJuggler provides FontShow as an alternative to the Font list. FontShow includes most of the features of the Font list and also lets you display or print a font or list of fonts in hundreds of size and style combinations. It can also indicate the available sizes of any font.

Name Conflicts

If more than one system resource of the same name occurs in different files, only one of the identically named items will appear in menus and lists. The Macintosh will access a system resource by searching for the item through the currently open files in the following order: application file, System file, open suitcase file 1 through open suitcase file 120. Consequently, if a system resource of the same name appears in the System file and a suitcase file, only the one in the System file can be accessed.

One special form of a name conflict is to have the same font in different sizes in different files. The result is that the Macintosh will only show, as available, the sizes in the first open file containing the font.

Generally speaking, it is best to resolve all name conflicts. MasterJuggler furnishes ResConflicts to detect name conflicts. Juggler Utilities includes Font/DA Utility and FKey/Sound Mover to resolve name conflicts.

Numbering Conflicts

If more than one font or sound with the same number occurs in different files, only one of the identically numbered items will be accessed. For fonts and sounds, you specify the item by name but the Macintosh then keeps track of it by number.

When 2 or more fonts have the same numbers, a font numbering conflict exists. If there is a font numbering conflict, your documents may display the wrong font. For example, instead of displaying the font "Tucson," it may display the font named "South Bend," which has the same number as "Tucson."

Adobe Systems and other type providers have converted their screen font libraries to use NFNT numbers. NFNT is a new font identification system which expands the range of numbers that the Macintosh system uses to keep track of typefaces. NFNT numbers eliminate the potential for font numbering conflicts and ensure that documents will display and print the correct fonts on any Macintosh. With the advent of TrueType, new sfnt resources have been introduced.

Users of Suitcase or older versions of MasterJuggler, however, will encounter a new type of numbering conflict. Because fonts are distributed among many open files, the possibility of NFNT or sfnt numbering conflicts arise. Users of MasterJuggler releases 1.57 and greater are spared NFNT and sfnt conflicts because MasterJuggler's FontDirector automatically resolves NFNT and sfnt conflicts without modifying the font resources. If you are using fonts, besides those supplied with the Macintosh and the LaserWriter, which do not use NFNT numbering, you will need to resolve any font numbering conflicts with the Resource Resolver utility included with MasterJuggler.

To determine if you have font numbering conflicts you should:

1) Open all of your fonts with MasterJuggler.
2) Choose ResConflicts from the MasterJuggler menu.
3) Click the fonts button and then the numbers button.
4) If you have any font numbering conflicts they will be displayed.

It is less likely there will be numbering conflicts with sounds since there are 32767 possible sound numbers. You can tell that you have a sound numbering conflict if you select one sound but a different sound is played in its place.

ResConflicts will report any numbering conflicts. Juggler Utilities includes Resource Resolver to eliminate font and sound numbering conflicts automatically and with minimal effort. You can also use Font/DA Utility and FKey/Sound Mover to manually renumber fonts and sounds yourself. Additionally, you may resolve numbering conflicts by moving the conflicting resources into the same file.

Application Management

The time required to quit one application and start another has given rise to several "Finder replacements." With the advent of System 6 MultiFinder and System 7, there is also the need to start multiple applications and to switch from one open application to another.

Opening Applications

MasterJuggler provides the Application list and the Application pop-up menu to open applications and their documents without returning to the Finder. The method used to open an application depends on whether or not you are running System 6 MultiFinder or System 7. Without System 6 MultiFinder or System 7, the current application is automatically quit before the new application is opened. With System 6 MultiFinder and System 7, the current application remains open and you may continue to open as many applications as available memory permits.

MasterJuggler also includes KeyChains, which allows sets of applications to be created that can be opened with one command.

Switching Applications

With System 6 MultiFinder and System 7, the Application list and Application pop-up menu also allow you to switch to any open application. These can be configured to hide the windows of the current application before switching. This is particularly useful when switching to the Finder. Hiding the windows of other applications allows full access to the desktop.

Window Management

Many applications allow you to work with several windows. Some of these windows are usually not selectable because they are completely obscured by the windows in front of them. MasterJuggler includes the Windows pop-up menu to allow you to bring to the front any selectable window within the current application.

Sound Management

Macintosh applications play sounds to get your attention and almost all play the system sound. MasterJuggler provides HotSounds to allow you to change the system sound and widen the scope of sound play.

Each application may be assigned an application sound which will override the system sound. Applications can be further customized by assigning sounds to each alert, thereby overriding the application and system sounds.

Sounds can also be assigned to seven Macintosh operations that do not normally play a sound. These operations are disk insert, disk eject, bad disk insert, launch, restart, shut down, and startup.

Whenever a sound is assigned, you have the choice of assigning a specific sound, a default sound, a random sound, or no sound.

Section 3: A Brief Tour Of MasterJuggler

For this tour, we will assume you have a Macintosh with one floppy disk drive and one hard disk drive.

MasterJuggler should have been installed and the Macintosh should have been restarted. The MasterJuggler "loaded" icon should have been displayed while the Macintosh was starting.

MasterJuggler Menus

After loading, the only visual indication that MasterJuggler is installed is the presence of a new menu item in the Apple menus of your applications. As shown in Figure 3-2, there is a MasterJuggler™ menu item inserted just above the list of available Apple menu items.

Figure 3-2
The MasterJuggler™ menu is inserted in the Apple menu

Figure 3-3 shows that upon selecting MasterJuggler™, its menu is displayed to the right of the Apple menu. This menu allows you access to the MasterJuggler DA, the five lists, FontShow, HotSounds, KeyChains, and ResConflicts.

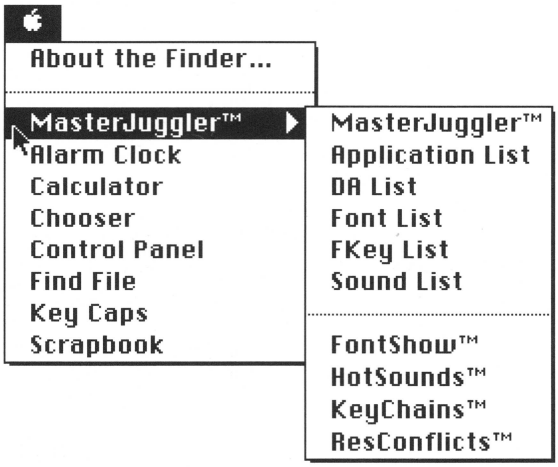

Figure 3-3
The MasterJuggler™ menu

Choose the MasterJuggler desk accessory from the MasterJuggler™ menu. First, position the mouse pointer over the Apple menu and press the mouse button. Drag down to the MasterJuggler™ menu. When its menu appears to the right, drag right to the MasterJuggler™ item in the new menu and release the mouse button.

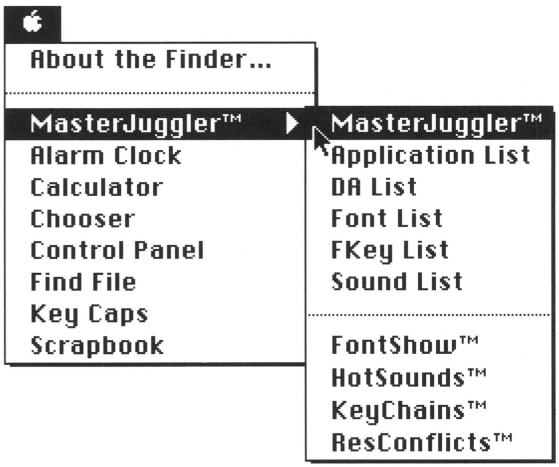

Figure 3-4
Choosing from the MasterJuggler™ menu

MasterJuggler DA

The MasterJuggler DA is the command center for MasterJuggler. With this DA you can open, close and view system resource files, compress and decompress fonts and sounds, make Hot Key assignments, and set options which affect the manner in which MasterJuggler operates.

When the MasterJuggler DA is opened it will display a window similar to the one in Figure 3-5

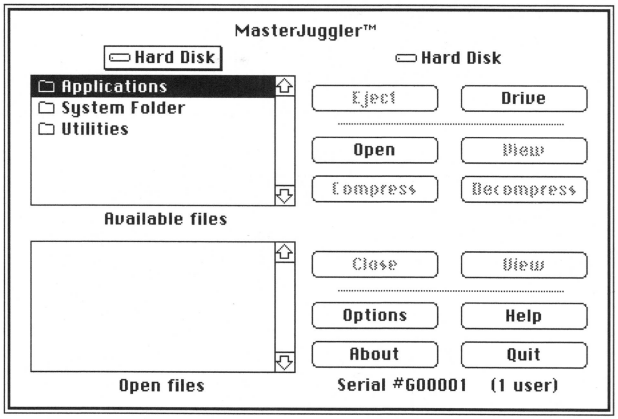

Figure 3-5
A typical MasterJuggler DA window

The window contains two lists and several buttons. The Available files list shows those files containing fonts, DAs, FKeys, or sounds which can be opened by MasterJuggler. The Open files list shows those files which have been opened by MasterJuggler.

Working With A File

In order to become familiar with MasterJuggler, we will open an example suitcase file from the ALSoft Power Utilities 2 diskette. This file is opened only as an example and should be closed after the tour. Closing the file will prevent MasterJuggler from searching for the file on the ALSoft Power Utilities 2 diskette at the next startup.

Insert the copy of the disk "ALSoft Power Utilities 2" diskette (made in Chapter 1, **Getting Started with ALSoft Power Utilities**) into a floppy disk drive. The Available Files list in the MasterJuggler window is updated to show the four public domain files on that disk.

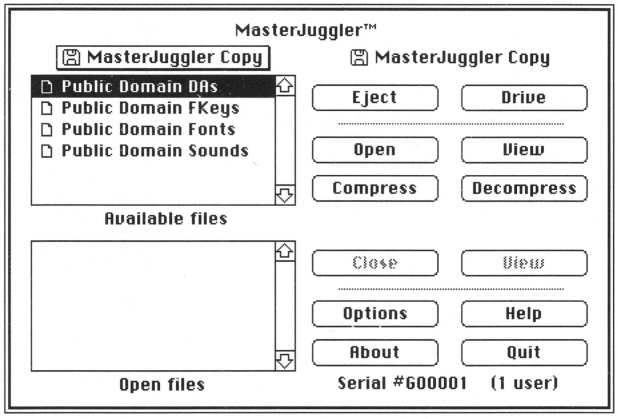

Figure 3-6
Public domain files

To see the resources in the file "Public Domain DAs" file, select it in the list and click the View button to the right of the Open button. A window like the one in Figure 3-7 will appear with a list of the DAs in the file. When you have finished viewing the file, click the Done button.

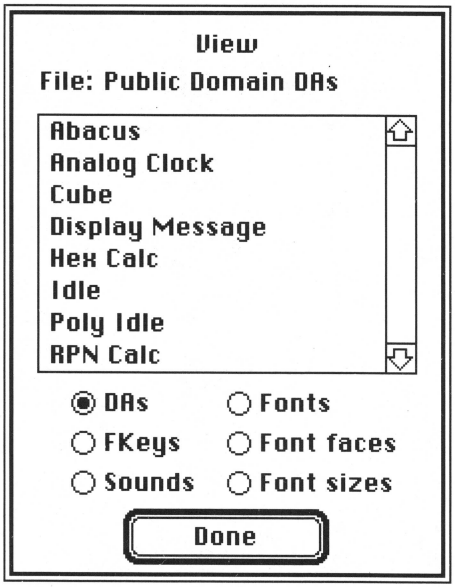

Figure 3-7
Clicking the View button displays a list of the resources in a file

To make the DAs in the "Public Domain DAs" file available system-wide (appear in the Apple menus), make sure the file is still selected and then click the Open button. The file is removed from the Available files list and added to the Open files list.

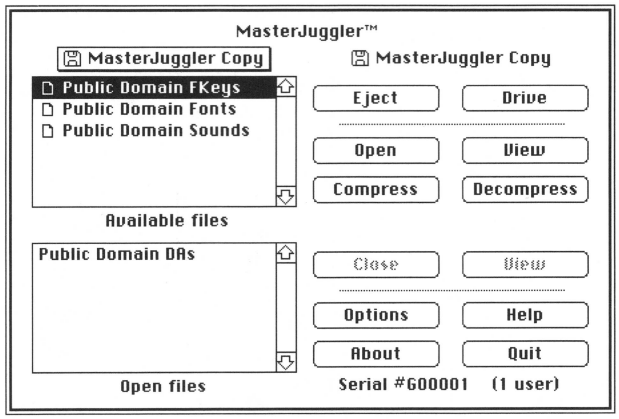

Figure 3-8
Opening a file adds it to the Open files list

Close the MasterJuggler DA by clicking the Quit button.

Display the Apple menu and you will see that it has been updated to contain the DAs in the System file and Apple menu and the DAs in the Public Domain DAs file. The Apple menus of all open applications are updated.

Figure 3-9
Updated Apple menu

Reopen the MasterJuggler DA by choosing it from the MasterJuggler™ menu. Click the Drive button until the Available files list displays the files on the "ALSoft Power Utilities 2" disk.

Open the file "Public Domain Fonts" and click Quit to close the MasterJuggler DA.

Working With A List

Open the font list by choosing it from the MasterJuggler™ menu. A window similar to the one in Figure 3-10 will appear.

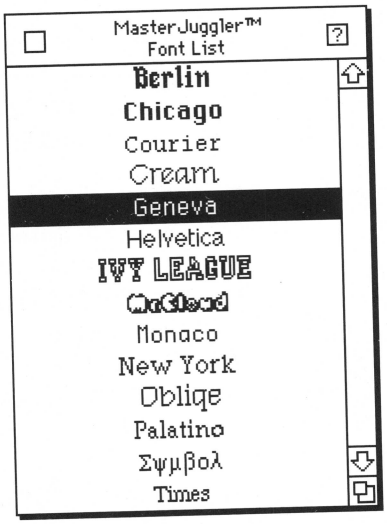

Figure 3-10
The Font list

The Font list allows you to view fonts and to choose the fonts to use as the default application font.

Open the MasterJuggler DA and close the Public Domain files that you have opened. This is the end of the tour.

Section 4: Reference

MasterJuggler Menus

There are three different menus provided by MasterJuggler to allow easy access to its features.

MasterJuggler™ Menu

After loading, the only visual indication that MasterJuggler is installed is the presence of a new menu item in the Apple menus of your applications and the Finder. As pictured in Figure 3-11, there is a MasterJuggler™ menu inserted just above the list of available desk accessories.

Figure 3-11
The MasterJuggler™ menu is inserted in the Apple menu

Figure 3-12 shows that upon selecting MasterJuggler™, its menu is displayed to the right of the Apple menu. This menu allows you access to the MasterJuggler DA, the five lists, FontShow, HotSounds, KeyChains, and ResConflicts

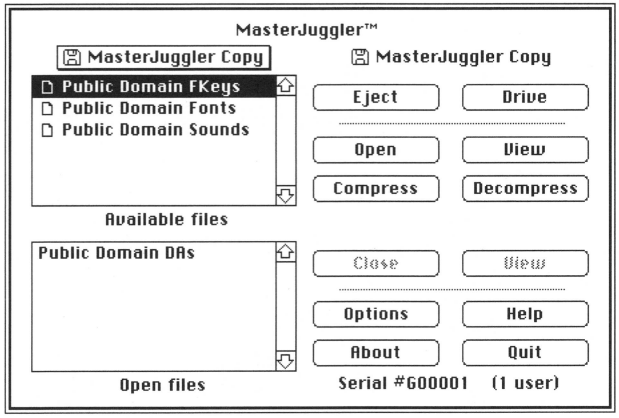

Figure 3-12
The MasterJuggler™ menu

MasterJuggler Pop-up Menu

The MasterJuggler pop-up menu is a pop-up version of the MasterJuggler™ menu. It is displayed by pressing its Hot Key sequence and clicking the mouse button. The pointer may be positioned anywhere except the menu bar.

Figure 3-13
The MasterJuggler pop-up menu

Because this menu pops up under the mouse pointer this is the most convenient menu to use for accessing MasterJuggler.

Abbreviated Apple Menu

The Abbreviated Apple menu is a combination of the Apple and MasterJuggler™ menus but does not contain any apple menu items except for MasterJuggler, the current application and Help for the current application (if it has Help displayed.) The Abbreviated Apple menu is displayed by pressing the Shift key while selecting the Apple menu.

Figure 3-14
The Abbreviated Apple menu

While running System 6 MultiFinder, the names of each open application will be appended to the bottom of the Abbreviated Apple menu.

MasterJuggler Desk Accessory

The MasterJuggler DA is the command center for MasterJuggler. With this DA you can open, close and view suitcase files, compress and decompress fonts and sounds, make Hot Key assignments, and set options which affect the manner in which MasterJuggler operates.

When the MasterJuggler DA is opened it will display a window similar to the one in Figure 3-15.

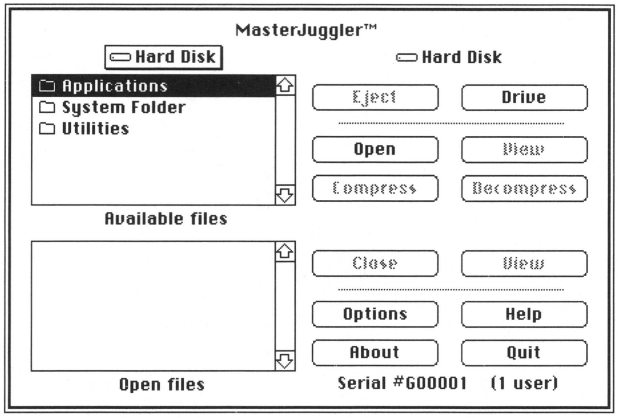

Figure 3-15
A typical MasterJuggler DA window

Available Files List

The Available files list displays only suitcase files that can be opened by MasterJuggler. By default, the list will display the folder containing the last file opened on the startup disk. Because of this, you may find it convenient to keep all of your suitcase files in one folder.

Open Files List

The Open files list displays the names of the suitcase files that have been opened by MasterJuggler. When a file is opened its name is removed from the Available files list and is placed in the Open files list. Files that are opened by MasterJuggler may not be opened by other utilities or applications. The maximum number of files that can be open at the same time is 120.

Eject/Desktop

These two buttons operate in their normal fashion to change the files shown in the Available files list.

Open

This button opens files and folders. Files and folders can also be opened by double-clicking their names in the Available files list.

If a folder is opened its contents will be displayed in the Available files list. If a file is opened, it will be removed from the Available files list and added to the Open files list. If 120 files are already open, MasterJuggler will respond by asking you to close one of the currently open files before trying to open another.

MasterJuggler opens files into system memory. If you are not running System 6 MultiFinder or System 7, then system memory is fixed at startup. If you are notified that there is not enough memory to open a file, simply restart the Macintosh. MasterJuggler will automatically size the system memory to accommodate additional files.

MasterJuggler can open suitcase files that are located on remote AppleShare and Tops volumes. If you want to open the same file from more than one copy of MasterJuggler, then setup the files as follows:

AppleShare/System 7 File Share- The folder containing the files should have "See Files" access privileges. No one should have "Make Changes" privileges. System 7 File Share requires that the files be locked, as well.

Tops - The folder containing the files should be published as "write-protected" and the files should be locked.

Files that are in the Open files list will be reopened automatically every time the Macintosh is restarted, provided that the volume on which the files reside is available at startup and that the files have not been moved or renamed since the last startup. If, at startup, MasterJuggler is unable to locate any suitcase files in the Open files list, the window shown in Figure 3-16 will be displayed.

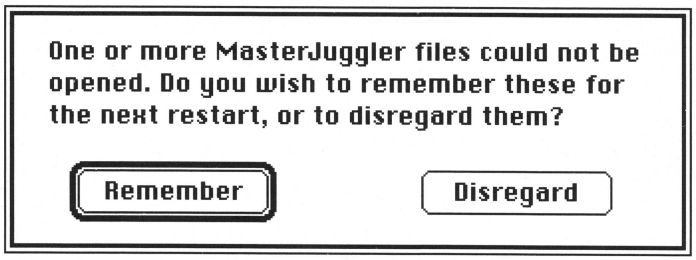
One or more MasterJuggler files could not be opened. Do you wish to remember these for the next restart, or to disregard them?
Remember
Disregard

Figure 3-16
MasterJuggler displays this window if suitcase files are not found at startup

Clicking the Remember button causes MasterJuggler to "remember" the missing files so that another attempt can be made to open them at the next startup. Clicking the Disregard button causes MasterJuggler to "forget" the files.

MasterJuggler can also, at startup, automatically reopen files over most AppleTalk networks, including files on remote AppleShare and Tops volumes. These volumes must be available at startup:

AppleShare/System 7 File Share- When selecting the server volume from the Chooser, check the box that indicates that the volume will be opened at system startup time.

Tops - The volume should be published and mounted with the "Remember" box checked.

You can specify that a file not be reopened on the next startup by pressing the Command key while opening the file. Files opened in this manner appear with a diamond before their name in the Open files list.

If you only wish to open a file and then immediately close the MasterJuggler DA, there is a handy shortcut available to you. Simply press the Option key while opening the file.

View (Available Files)

The upper View button allows you to see the names of the system resources in a file in the Available files list. Selecting a file and then clicking View will open a window similar to the one in Figure 3-17.

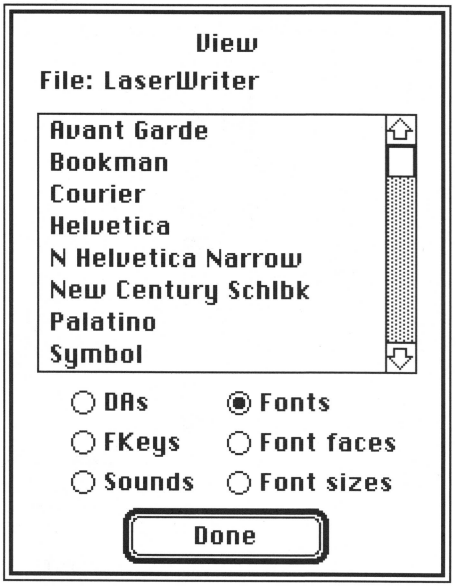

Figure 3-17
Clicking the View button displays a list of the resources in a file

The resource names are presented in a list. Four buttons allow you to select the type of resource to be viewed. Clicking DAs, Fonts, FKeys, or Sounds will change the list to display their respective resource types. Font files will default to displaying fonts, DA files will default to displaying DAs, etc.

If fonts are in the selected file, clicking the Font faces button will display each font's actual face at 12 point (Figure 3-18)

Figure 3-18
Clicking the Font faces button displays a list of fonts in their actual 12 point face

Clicking the Font sizes button will display the available sizes of each font (Figure 3-19.)

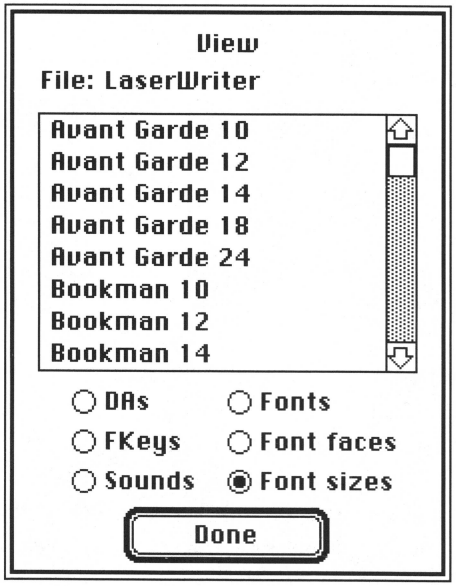

Figure 3-19
Clicking the Font sizes button displays a list of all fonts and their available sizes

If sounds are in the selected file, you may play any sound shown in the view list by holding down the Option key and clicking on the name of the sound.

Compress/Decompress

The Compress button allows you to compress the fonts and sounds in any file in the Available files list. Resources of type 'FONT', 'NFNT', 'FOND', 'sfnt', and 'snd' are compressed. MasterJuggler recognizes these compressed fonts and sounds when they are being loaded for use, and temporarily decompresses them.

Compression regains from 6% to 60% of the disk space used for fonts and from 0% to 40% for sounds. The amount regained for fonts depends upon the actual font, its type (bitmap or outline), and size. The average space regained for fonts is nearly 40% and for sounds is about 20%.

Warning: Never compress the fonts or sounds in a System file. If you start the system without MasterJuggler being loaded, the fonts cannot be decompressed. Normally, System files are not displayed in the Available files list and should not be of concern.

The Decompress button will permanently decompress the fonts and sounds in a file in the Available files list. Before decompressing a file, verify that the disk containing the file has adequate free space to save the decompressed file.

You will be alerted if you attempt to compress or decompress a file that does not contain any font or sound resources.

Close

This button closes files in the Open files list. Files can also be closed by double-clicking on their names in the Open files list.

If the file being closed contains fonts, open applications may be surprised to find the fonts missing. A few applications will even crash if these fonts are not present. Depending upon the Options settings, you will be notified if the file being closed contains fonts.

If you only wish to close a file and then immediately close the MasterJuggler DA, there is a handy shortcut available to you. Simply press the Option key while closing the file.

View (Open Files)

This lower view button behaves exactly like the upper view button except that it allows you to view files that are in the Open files list.

Options

Clicking the Options button opens a window that allows you to assign Hot Keys and to set General Options that alter the way MasterJuggler operates.

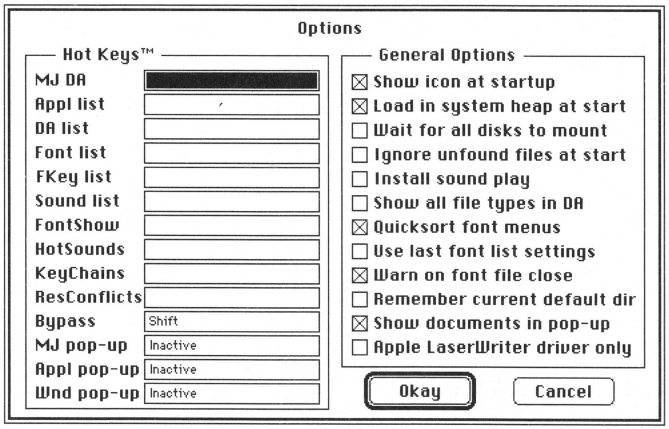

Figure 3-20
The MasterJuggler Options window

Hot Keys

Hot Keys can be assigned to the MasterJuggler DA, the five lists, FontShow, HotSounds, KeyChains, ResConflicts, startup bypass, and to each of the three MasterJuggler pop-up menus.

To assign a Hot Key to any of the first 10 functions, click in or tab to the appropriate box and type in a keyboard sequence that includes the Command key (example, Command - Shift - d for the DA list.) The caps lock key is ignored during the setting of these Hot Key key sequences.

Due to an undocumented feature of System 6 MultiFinder and System 7, the Option key cannot be included as part of the keyboard sequence for the MasterJuggler DA Hot Key.

The arrow keys and certain keypad keys (=, /, -, +) show up slightly different when entered as part of a Hot Key sequence because the system remaps these keys to appear as they did on the old Macintosh 128K keypad. Then, the arrow keys were on the keypad, and the =, /, -, and + keys were entered by pressing Shift-arrow key. This slight difference can be ignored.

All keys on the keypad and the arrow keys will be displayed with a subscripted k when typed as part of a Hot Key sequence.

To assign Hot Keys for Bypass and the three MasterJuggler pop-up menus, click or tab to the appropriate box. These Hot Keys are constrained to predefined keyboard sequences that include only the modifier keys Command, Option, Shift, Control, and Caps lock. Press the Enter key to toggle between the predefined sequences.

General Options

The list of General Options on the right side of the Options window has check boxes for changing the characteristics of how MasterJuggler functions. Click in the check boxes to activate the desired options.

Show icon at startup determines whether the "loaded" icon will be displayed at startup.

Load in system heap at start causes MasterJuggler to be loaded into system memory. This option is useful for compatibility with a few Macintosh games.

Wait for all disks to mount causes MasterJuggler to pause during startup to allow the Macintosh time to recognize any inserted floppy disks or additional hard disks and partitions. If, at startup, you receive the MasterJuggler message "One or more MasterJuggler files could not be opened. Do you wish to remember these for the next restart, or to disregard them?", then check the following:

1) Are you running System 7?
2) Did you, before the last restart, open a resource file that is not on the startup volume?
3) Is the hard disk that contains the resource file a non-Apple hard disk such as a MacinStore hard disk or is the hard disk using LaCie's Silverlining?

If you can answer yes to all three of the above then there might be a compatibility problem between MasterJuggler and your hard disk's driver. To resolve the problem, turn on the option "Wait for all disks to mount" in the MasterJuggler options dialog. Restart the Macintosh and check to see if the startup message from MasterJuggler goes away. If the message persists then you do not have a compatibility problem so turn off the "Wait for all disks to mount" option and try running the utility "MJ File Finder" in the Extras folder on the ALSoft Power Utilities Disk 2 diskette.

Ignore unfound files at start causes MasterJuggler not to display the missing file startup window shown in Figure 3-16. This option will also cause MasterJuggler to disregard any missing files at startup.

Install sound play allows the Macintosh 512KE, Plus, or SE that is not running under System Software 6.0 or later to play resource sounds. This option also allows a Macintosh II not using System Software 6.0 or later to play both Macintosh II sounds and HyperCard sounds.

Show all file types in DA determines the type of files displayed in the Available files list. With this option off (the default) only files whose types indicate that they contain fonts, DAs, FKeys, and sounds are displayed in the list. Turning this option on will cause the Available files list to display any closed file which contains any type of resource.

> **Note:** While very powerful, the Show all file types in DA option has the potential of being abused. For example, opening an application with the MasterJuggler DA and then trying to run the application will cause a system bomb. There is nothing that MasterJuggler can do to prevent you from abusing this option. In general, it is best to only open those files intended to contain suitcase files. By default, the Show all file types in DA option is turned off.

Quick sort font menus causes MasterJuggler to use its own sorting routines to alphabetically sort the font names in a font menu. While the quick sort option is much faster than the sorting routines built into the Macintosh, international script fonts, such as Arabic, will not be displayed in font menus while this option is on.

Use last font list settings causes the font list upon opening to use the same settings as when it was last closed.

Warn on font file close determines whether a warning will be given whenever a suitcase file containing fonts is closed with the MasterJuggler DA.

Remember current default dir causes MasterJuggler to remember the last volume and folder from which a file was opened. The contents of this folder will be displayed, by default, in the Available files list each time the MasterJuggler DA is opened. While this option is on, the default volume and folder will not change, regardless of where other files are opened from.

Show documents in pop-up causes the Application pop-up menu to add a document submenu next to each application that has had documents assigned to it in the Application list. Creating the submenus for a great number of documents can cause a slight delay when opening the Application pop-up.

Apple LaserWriter driver only confines searching for downloadable PostScript font files by non-Apple LaserWriter drivers to the System folder only. MasterJuggler allows you to place PostScript font files in folders other than the System folder. When opening a PostScript font file, MasterJuggler will cause Adobe Type Manager and the Apple LaserWriter and Aldus drivers to search the System Folder of the startup disk followed by the folders containing the files opened by MasterJuggler. The folders can be on any disk, including a file server. One convenient way to use this feature is to place the PostScript font files for a particular font in the same folder that contains the corresponding screen font. If the "Apple LaserWriter driver only" option is on, MasterJuggler will not support PostScript files outside of the System folder for Adobe Type Manager or the Aldus or other non-Apple PostScript printer drivers.

About

Clicking About opens a window which displays information about MasterJuggler. The information includes the MasterJuggler release number, ALSoft mailing address, and telephone numbers. A mouse click or key press will remove the window.

Help

Clicking Help displays a window containing abbreviated instructions for using the MasterJuggler DA. A mouse click or key press will remove the window.

Quit

Clicking Quit closes the MasterJuggler DA.

Shortcuts

The following keyboard equivalents are defined for the buttons in the MasterJuggler DA:

Command - right/left arrow	Drive
return or enter	Open
Command - v	View (available files)
Command - 2	View (open files)
Command - p	Compress
Command - x	Decompress
Command - c	Close
Command - t	Options
Command - h	Help
Command - a	About

Lists

The four system resource lists (DA list, Font list, FKey list, and Sound list) and the Application list have many features in common. They can be opened from the MasterJuggler™ menu, the Abbreviated Apple menu, the MasterJuggler Pop-up menu, or by pressing their Hot Keys.

The lists appear in a window that can be moved by dragging in its title bar. The window will be shown in the new location the next time it is opened. If the top of the window is moved under the menu bar, the window will be centered the next time that it is opened.

Application and DA windows behind the list may not be updated as the window is moved; however, the

windows will be updated when the list window is closed. This is normal and need not be of any concern.

Each time a list is opened, its window will be automatically sized to show as many items as the screen size permits. The window may be manually resized to show a fixed number of items. If the bottom of the window is moved off the screen, the window will resume automatic resizing the next time it is opened.

To select an item in a list using the keyboard, type the first few letters of the item's name. (Note that it is not necessary to wait for the list to appear before typing letters. Type-ahead is supported.) If you make a mistake, simply wait about a second to restart typing again. A new item will be selected based upon the new typing sequence.

You may also select items in the list using the following key combinations:

up arrow	(Command -,)	previous item
down arrow	(Command -.)	next item
Shift - up arrow	(Command - Shift -,)	top of previous page
Shift - down arrow	(Command - Shift -.)	top of next page
Option - up arrow	(Command - Option - ,)	first item in list
Option - down arrow	(Command - Option - .)	last item in list

Each list has help available by typing Command - h (for help) or by clicking the question mark in the window's title bar.

While this MasterJuggler DA is open, any of four resource lists can be opened by pressing their Hot Keys. The DA list, however, will be in a special preview mode that will prevent additional DAs from being opened.

To close a list window, click the close box or type Command-enter or Command-return.

Application List

The Application List, shown in Figure 3-21, allows you to open applications and their documents without returning to the Finder. The method used by the Application list to open an application depends on whether or not you are running System 6 MultiFinder or System 7. Without System 6 MultiFinder or System 7, the current application is automatically quit before the new application is opened. Because of this, the current application must have a Quit Command in a File menu if the Application list is to open a different application. Under System 6 MultiFinder and System 7, the current application remains open and you may continue to open as many applications as available memory permits.

Under System 6 MultiFinder and System 7, the Application list also allows you to switch to any open application. It can even be configured to hide (vanish) the windows of the current application before switching. This is particularly useful when switching to the Finder. Hiding the windows of other applications allows full access to the desktop.

Finally, the Application list can be used to restart or shut down the Macintosh.

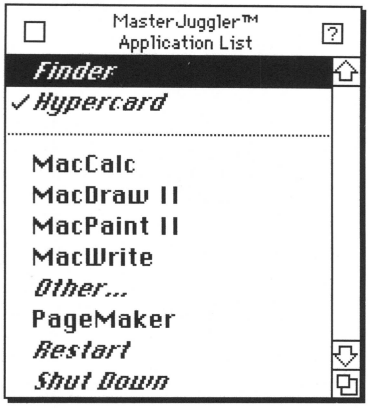

Figure 3-21
The Application list

Under System 6 MultiFinder and System 7, the Application list window is divided into two areas. The top, Open Applications area is used to switch between open applications while the lower, Application area is used to open applications and their documents. Without System 6 MultiFinder or System 7, only the Application area is present. Pressing the tab key toggles between the Open Applications and Application areas.

Open Applications Area

To switch applications, select an open application from the Open Applications area of the list and type return or enter or double-click the application. If the vanishing windows feature is on, the windows of the current application will be hidden before switching. MasterJuggler performs a System 7 "Hide" when running System 7. The result is the same as under System 6 in that the windows disappear.

At the top of the Open Applications area, if you are running System 7, MasterJuggler displays Hide, Hide Others, and Show All commands, just like the System 7 application menu.

Type Command - t to toggle the vanishing windows feature on and off. The application names in the Open Applications area are italicized if this feature is on.

Application Area

The application area contains three predefined "applications." These applications are really the Other, Restart, and Shut Down commands. The Other command allows you to open an application that is not in the application area. Choosing the Restart or Shut Down commands will cause you to return to the Finder where the Restart or Shut Down command will be chosen, automatically, from the Finder's Special menu. If you press the Command key while returning to the Finder, the Restart or Shut Down will be canceled.

To add an application to the application area, type Command - a. A window will appear with a list of folders and applications. Select an application from this list and click the Add button. The window will disappear momentarily, while the application is added to the application area, and reappear to allow you to add another. Click the Done button when you have finished adding applications.

To delete an application from the application area, select the application and type Command - d.

To open an application in the application area, select the application and type return or enter or double-click the application. If the application cannot be found, a window will appear with a list of folders and application(s) Find the application within the list and click the Open button.

To open an application that is not in the application area, choose the Other command or type Command - o. A window will appear with a list of folders and applications. Select an application from this list and click the Open button.

If an application cannot be opened, for any reason (not enough memory, too many applications open, etc.), the system sound will be played.

Each application in the Application area has its own document list. To switch to an application's document list, select the application and type Command - s or press the Option key and click the application. The entire Application list window now displays a document list like the one in Figure 3-22. Type Command - s or Option click again to return to the main list.

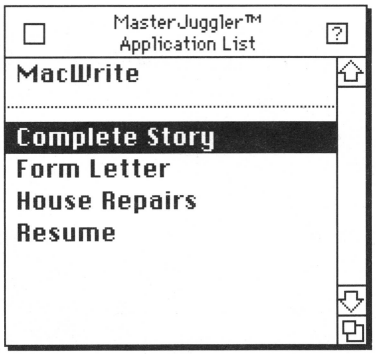

Figure 3-22
The Document list

At the top of the document list is the application name. Pressing the tab toggles selection between the application and the first document.

To add a document to the document list, type Command - a. A window will appear with a list of folders and the documents which belong to this application. Select a document from this list and click the Add button. The window will disappear momentarily, while the document is added to the document list, and reappears to allow you to add another. Click the Done button when you have finished adding documents.

To delete an document from the document list, select the document and type Command - d.

To open a document in the document list, select the document and type return or enter or double-click the document. If the document cannot be found, a window will appear with a list of folders and documents. Find the document within the list and click the Open button.

Documents added to an application's document list will be displayed in a submenu attached to the application in the Application pop-up menu, provided the Show documents in pop-up option (from the MasterJuggler DA Options window) is checked.

Note: Applications and documents will be grayed and disabled if the volume on which they reside is unavailable. Should the volume become available–even while the list is open–they will be enabled.

DA List

The DA list allows you to open a DA or other Apple Menu item from the keyboard. To open a DA, double-click its name or select its name (using the keyboard or mouse) and type return or enter.

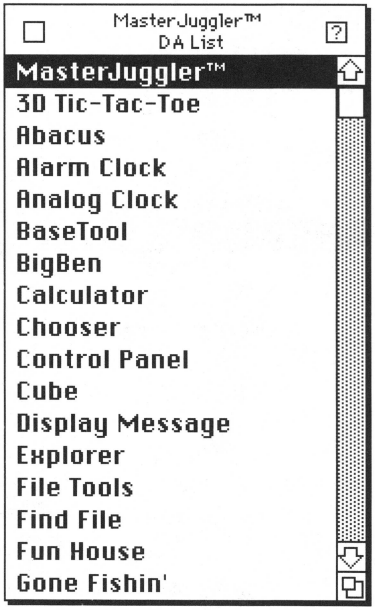

Figure 3-23
The DA list

The DA list may not be opened in front of any dialogs or alerts except for the MasterJuggler DA. When opened in front of the MasterJuggler DA, the DA list is in a special preview mode that allows you to preview the Apple menu after opening or closing files containing DAs. DAs may not be opened while in the preview mode.

Font List

The Font list allows you to view all of the currently available font names in their own face, in each of 9 styles, at 12 point. You can optionally display the font names in the Chicago font or display font information or gray fonts of a particular type (bitmap or outline.)

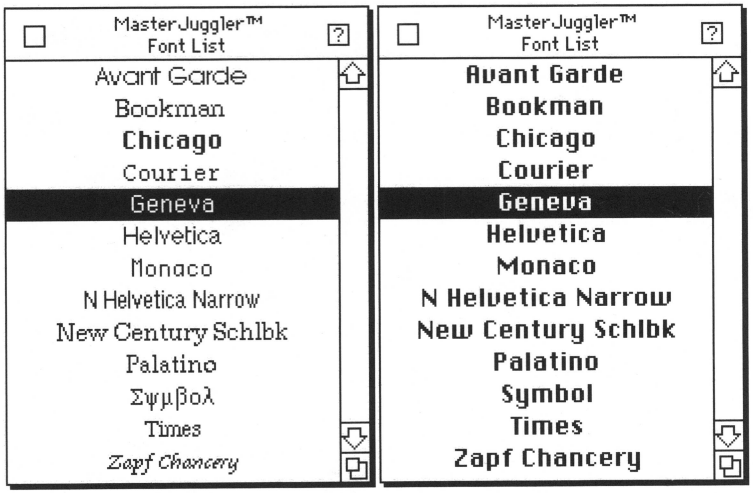

Figure 3-24
The Font list. Plain style on the left, names in Chicago on the right.

The current default application font is highlighted when the Font list is opened. If the default font is not normally visible in the list, the list will be scrolled to position it at the top of the list. To change the default application font, select its name (using the keyboard or mouse) and type return or enter or double-click its name.

Warning: Some applications may not be able to properly handle a "new" default font. They may use the new font in the wrong places. Experiment to minimize surprises.

To change the style use the style commands by typing one of the following key combinations:

Command - p	Plain
Command - a	Bold and Italic
Command - b	Bold
Command - i	Italic
Command - u	Underline
Command - e	Extended
Command - c	Condensed
Command - s	Shadow
Command - o	Outline

To display the font names in Chicago, type Command - n. To resume displaying the font names in their own font, type one of the style commands.

Typing Command - f will display information about the font. The font names are replaced with a sequence like A 12, D 3, L 1, W 16. This would indicate that the characters of the font (at 12 point) have an Ascent of 12, a Descent of 3, a Leading of 1 and that the Width of the Widest character is 16 points. To resume displaying the font names in their own font, type one of the style commands.

Typing Command - t toggles the list to gray certain font types. Typing Command - t once grays outline fonts to make the bitmap fonts stand out in the list. Typing Command - t again grays the bitmap fonts to make the outline fonts stand out. Typing Command - t a third time returns the list to normal.

Typing Command - x will close the Font list and open the more advanced FontShow.

The font list may be opened (with its Hot Key) while running Font/DA Mover to view the fonts in an open file before copying or removing.

FKey List

The FKey list allows you to open an FKey from the keyboard by name. To open an FKey, double-click its name or select its name (using the keyboard or mouse) and type enter or return.

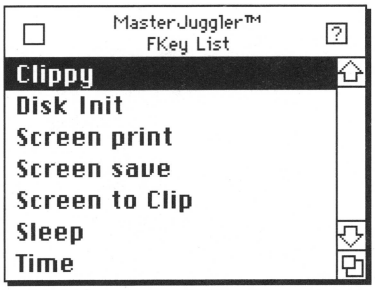

Figure 3-25
The FKey list

Some FKeys will not open if the window immediately behind the FKey list belongs to a dialog or alert.

Sound List

The Sound list allows you to play sounds and to choose the sound to be used as the system sound. You may also choose to have sounds played randomly.

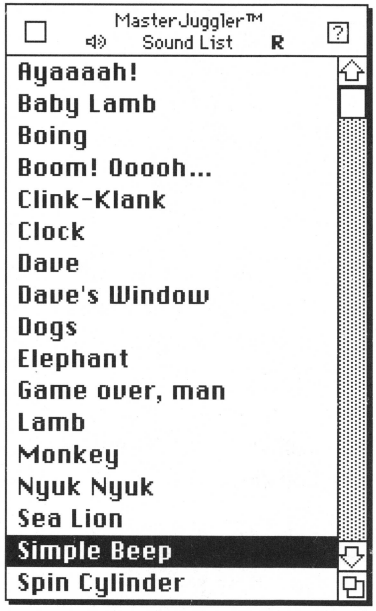

Figure 3-26
The Sound list

To play a sound, select one with the mouse or keyboard and then hold down the Command key and press P (for play.) You can also play a sound by pressing the Option key while clicking a sound name.

If a selected sound cannot be played, the sound list will play the simple beep. Reasons a sound are not played include the sound may be too large to read into memory; the file containing the sound may be corrupted; the Install sound play option may not be checked.

To set a new system sound, select its name (using the keyboard or mouse) and type return or enter or double-click its name. Now whenever the Macintosh would normally beep, it will play that sound.

Typing Command - s will toggle the Install sound play option on/off without having to select it from the MasterJuggler DA Options window. When toggled on, a small speaker icon will appear in the left side of the Sound list title bar.

Typing Command - r will toggle random sounds on/off. When turned on, the sound to use as the system sound will be chosen at random every time the system sound is played. A small "R" appears in the right side of the Sound list title bar when random sounds is on.

To sequentially play all sounds in the Sound list, type Command - a. To continuously play all sounds, type Command - l. Typing Command - m will cause continuous play of random sounds from the list. Typing Command - . (period) will halt any of the three previously mentioned commands after the Sound list has finished playing the current sound.

Typing Command - x will close the Sound list and open the more advanced HotSounds.

FontShow

FontShow is an advanced alternative to the Font list. It allows you to easily display and print lists of fonts. Font size, font style and even font type (bitmap or outline) may be adjusted from within FontShow. Fonts may be listed with or without their names. In addition, a line of text may be entered which will appear in each available font face.

Note: Outline includes both PostScript and TrueType fonts, although an outline version of the font may not be used on the screen.

FontShow automatically becomes available when MasterJuggler is installed on your system disk and loaded. To access FontShow, simply select it from either the MasterJuggler menu, MasterJuggler pop-up menu or use the Hot Key assigned by you to FontShow. Please note that FontShow cannot be opened if an alert or dialog is currently active. First respond to the alert or dialog, then open FontShow.

When you open FontShow you will see a window similar to that shown in Figure 3-27 (the displayed fonts may be different depending upon which fonts are available on your particular system.)

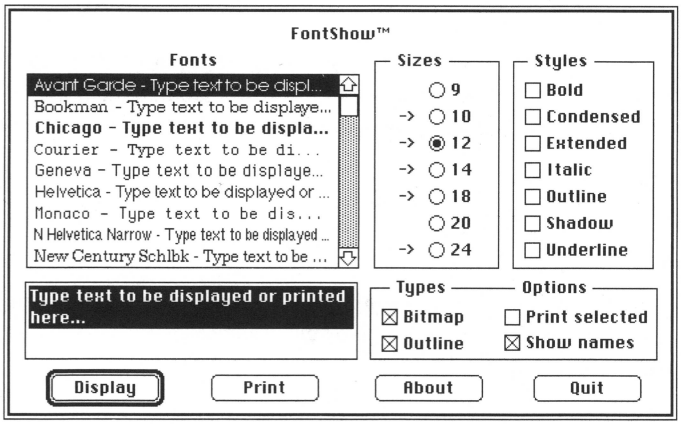

Figure 3-27
The FontShow window

Fonts

The Fonts list displays each available font with its name followed by a line of text. The size, style, type, and so forth of the fonts being displayed are determined by buttons elsewhere in the FontShow window.

Sizes

The Size buttons can change the fonts that are displayed and printed to be any one of seven sizes: 9, 10, 12, 14, 18, 20, or 24 point. To change the font size simply click one of the size buttons.

When a single font in the list of fonts is selected, FontShow will place arrows next to each size button for which sizes of the font exist.

Styles

The Style buttons can change the style of the fonts that are displayed and printed to be any of seven styles, which may be selected in any combination: Bold, Condensed, Extended, Italic, Outline, Shadow and Underline. To select a particular style, click in the check box beside the style. To remove a style, click in the check box again.

Types

The Type check boxes determine the type of fonts you wish displayed and printed. You may select either bitmap fonts, outline fonts or both. If a type of font is not selected the corresponding fonts will be dimmed in the font list. When the list is printed these fonts will not be printed.

Options

The Option check boxes allow you to print only the currently selected fonts, and to show or not show font names. If you turn on the Print selected option, only the fonts which you have selected in the font list will be printed. In this case the font types are ignored altogether. Selecting the Show names option causes the name of the font to appear before the line of text.

Text Box/Display

You may also change the text to be displayed and printed. To do this simply type into the text box, which appears below the list of fonts, using standard Macintosh text editing procedures. To cause the display to be updated with the new text, press return or enter, or click the Display button. The display is also updated when options are changed.

Print

If you wish to print a list of your fonts, simply click the Print button. You will be prompted for page setup and print job information with the standard Macintosh print windows. Print information such as page orientation and size, number of copies, etc. may be set via these windows. After this information is entered, FontShow will start to print a list of fonts. It will display a window telling you that it is printing. You may cancel printing by typing a Command - . (period.)

The LaserWriter may not have enough memory to print a page with each line containing a different font. It may be necessary to choose the Unlimited Downloadable Fonts in a Document option in the Page Setup window.

If FontShow is not able to complete printing successfully it will display an error message, along with an error number. Common reasons for errors are a missing printer resource, low memory, or inadequate disk space. Check these first if a print error should occur. Advanced users may also use the error number to find the source of the error by looking the number up in a reference book such as Inside Macintosh.

About

Clicking About opens a window which displays information about FontShow. The information includes the FontShow release number. A mouse click or key press will remove the window.

Quit

Clicking Quit or typing Command-enter or Command-return closes the FontShow window.

HotSounds

HotSounds allows you to assign sounds to many different Macintosh operations. The system sound may be assigned and each application may be assigned an application sound which will override the system sound. Applications can be further customized by assigning sounds to each alert, thereby overriding both the application and system sounds.

In addition, sounds can also be assigned to seven Macintosh operations that do not normally play a sound. These operations are disk insert, disk eject, bad disk, launch, restart, shut down, and startup.

Whenever a sound is assigned, you have the choice of assigning a specific sound, a default sound, a random sound, or no sound. Also, you can quickly adjust the Macintosh speaker volume.

HotSounds follows a certain hierarchy of sounds, when determining what to play for a system sound. If an alert is present, and has a specific "alert" sound assigned to it, then that sound is played. When an alert is not present, or when an alert has no sound assignment or uses the 'default' sound, then HotSounds follows another course of action. It searches to see if the currently running application has a specific "application" sound assigned to it. If so, HotSounds plays that sound. Finally, if none of the above conditions are met, then HotSounds plays the assigned 'system' sound.

When you open HotSounds, you will see a window similar to that shown in Figure 3-28 (the displayed sounds may be different depending upon which sounds are available on your particular system.)

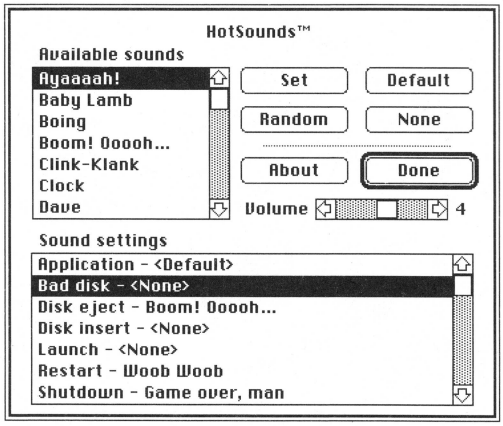

Figure 3-28
The HotSounds window

Available sounds

The Available sounds list shows the sounds contained in any currently open suitcase files.

Sound Settings

The Sound settings list shows the Macintosh operations to which sounds can be assigned. These operations are listed here.

Alert

When any application alert is the front window, HotSounds will show this sound setting. This allows you to make a sound assignment to that specific alert. If an alert is not in front, this sound setting is not shown.

Application
Normally an application will play the system sound to attract your attention. Via the application sound setting, HotSounds allows you to assign a sound to the currently running application which will play in place of the system sound.

Bad Disk
When the system attempts to mount a new volume, it determines whether this volume is properly formatted. If it is not, the system issues a "bad disk" message. The sound assigned to the bad disk sound setting will be played when this message is displayed.

Disk Eject
Whenever a volume is unmounted (for example, when a floppy disk is ejected), the sound assigned to this setting will be played.

Disk Insert
Whenever a volume is properly mounted, the sound assigned to this setting will be played. Note that the disk insert sound will not be played for volumes which are mounted when your Macintosh first starts.

Launch
When any applications are started the sound assigned to this setting will be played.

Restart
When you restart your Macintosh the sound assigned to this setting will be played just before the screen is blanked.

Shutdown
When you shutdown your Macintosh the sound assigned to this setting will be played just before the screen is blanked.

Startup
When you start up your Macintosh the sound assigned to this setting will be played just before the Finder is started.

System
Whenever the system needs to attract your attention by playing the system sound (system beep), the sound assigned to this setting will be played.

Buttons

Set

The Set button is only active when both a sound and a sound setting are selected. When it is clicked, the selected sound is assigned to the selected Macintosh operation.

Default

The Default button gives the selected Macintosh operation that sound which would be played if a system sound were to occur (see the hierarchy of sounds described previously for more information concerning what is played for the system sound.)

Random

The Random button assigns a non-specific sound to the selected Macintosh operation. When the sound for this operation is to be played, one will be selected randomly from among all available sounds.

None

The None button prevents the selected Macintosh operation from playing any sound. This is true even for the system, application, and alert sounds! In other words, if None were assigned to the system sound, no system sound would be played! Use this option with caution.

About

Clicking About opens a window which displays information about HotSounds. The information includes the HotSounds release number. A mouse click or key press will remove the window.

Done

Clicking Done or typing enter, return, Command-enter or Command-return closes the HotSounds window.

Volume

The Volume control lets you quickly set the Macintosh speaker volume. The HotSounds volume control has the same affect as the volume control on the Control Panel desk accessory. However, it is much faster to access the HotSounds volume control than to open the Control Panel.

KeyChains

KeyChains allows you to create "chains" of applications or sounds, which can be executed with a single command. Application chains allow you to start many applications sequentially when you are running under System 6 MultiFinder or System 7. Sound chains allow you to play many sounds sequentially.

When you open KeyChains, you will see a window similar to that shown in Figure 3-29. Any chains which have been created appear in the KeyChains window list.

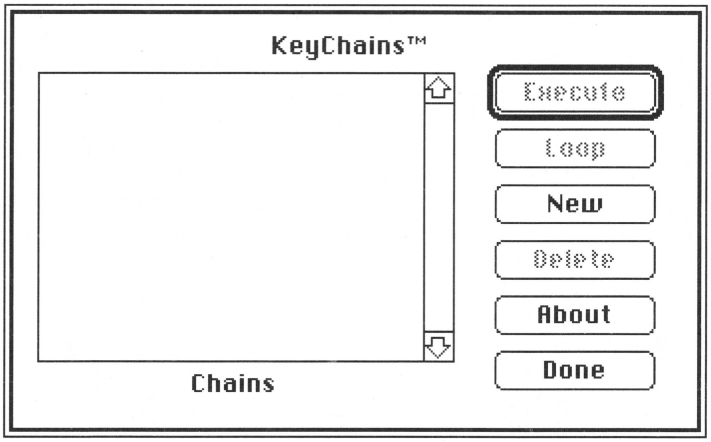

Figure 3-29
The KeyChains window

Execute
The Execute button is used to start a chain. First select a chain by clicking on its name in the chains list. Then you may start it by clicking the Execute button. When this button is clicked, the KeyChains window is first closed and then the chain is executed.

Application chains can only be executed while you are running under System 6 MultiFinder or System 7. The applications may not start in the same order as they appear in the chain. Applications which are already open or not available are automatically skipped. In addition, if System 6 MultiFinder or System 7 cannot start an application for any other reason (such as a lack of memory), then that application is also skipped.

The execution of a chain can be canceled by typing the Command -. keys.

Loop
The Loop button is available only for sound chains. When this button is clicked, the KeyChains window is first closed and then the selected sound chain is executed repeatedly. It will not stop until the Command -. keys are pressed.

New
The New button opens a second window, shown in Figure 3-30, that is used to create and add chains to the Chains list.

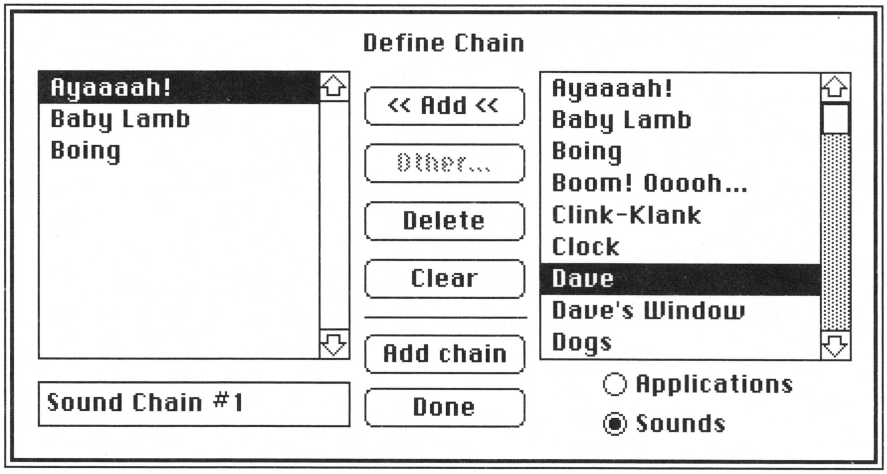

Figure 3-30
The KeyChains New window

This window has two lists. The chain list, on the left, displays the names of applications or sounds which have been added to a new chain. The list on the right displays the currently available applications or sounds.

Applications/Sounds
The Applications and Sounds buttons, in the lower right of the New window, determine the type of chain to be created.

The list above these buttons displays either applications or sounds, depending upon which button has been chosen. If Applications has been chosen, then all applications defined in the Application list will appear. If Sounds has been chosen, then all available sounds will be shown.

Add
The Add button places the name of the currently selected item into the chain list on the left. To select an item to be added, click on its name in the list on the right.

Other...
The Other button is active only when the Applications button has been chosen. When it is clicked, a window will appear with a list of folders and applications. From this window you can select applications that are not in the Applications list to be added to the new chain.

Delete
The Delete button allows you to remove names from the chain list. It is only active when an item name in the left list has been selected. To select an item to be deleted, click on its name in the chain list.

Clear
The Clear button removes all names from the chain list. It is active only when at least one name has been added to the chain.

Add Chain
The Add chain button completes the creation of a chain. It is active only when at least one item has been added to the left list, and a name for the chain appears in the Chain Name... box (see above.) Chains which have been added with this command will appear in the main KeyChains window.

When Add Chain is clicked, the left list will be cleared to allow creation of another chain.

Done
The Done button closes the New window and brings the main KeyChains window back to the front.

Chain Name...
The Chain name... text box is used to enter the name of the chain being created. This is the name added to the list in the main KeyChains window.

Delete
The Delete button removes the selected chain name from the Chains list.

About
Clicking About opens a window which displays information about KeyChains. The information includes the KeyChains release number. A mouse click or key press will remove the window.

Done
Clicking Done or typing enter, return, Command-enter or Command-return closes the KeyChains window.

ResConflicts

ResConflicts allows you to determine whether any name or numbering conflicts exist among currently available fonts, DAs, FKeys, or sounds. With ResConflicts you may print listings of any such conflicts, or simply print complete listings of those resources mentioned above.

When you open ResConflicts, you will see a window similar to that shown in Figure 3-31.

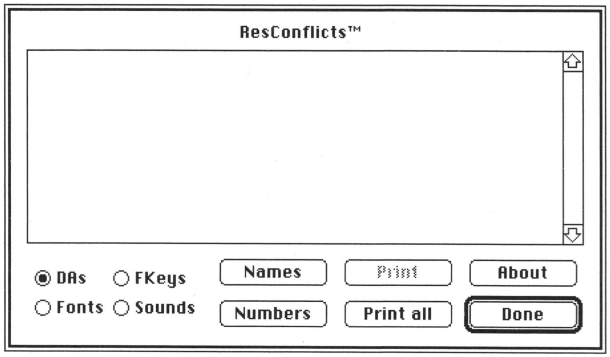

Figure 3-31
The ResConflicts window

To use ResConflicts, simply select a resource type to be examined (see below.) Next, click the Names or Numbers button. ResConflicts will then check all open files for conflicts of the selected type. Any conflicts will be displayed by showing the resource type, the conflict type, the specific items in conflict and, in parentheses, the file name(s) in which the resources are located.

DAs/Fonts/FKeys/Sounds

The DAs, Fonts, FKeys, and Sounds buttons determine the type of resource to be examined. After selecting a resource type, either the Names or Numbers button must still be clicked before any conflicts will be displayed.

Note that the Fonts button refers to font families, not individual font sizes. Provisions have been made to examine individual fonts also, as mentioned below in the Numbers and Print all sections.

Names

The Names button is used to examine all open files for name conflicts among resources of the selected type. If no conflicts are found, a message stating so is displayed.

Numbers
The Numbers button is used to examine all open files for numbering conflicts among resources of the selected type. If no conflicts are found, a message stating so is displayed.

Normally, when the Fonts button has been selected, ResConflicts shows numbering conflicts among font families ('FOND's.) It is also possible to show numbering conflicts among both font ('FONT'), new font ('NFNT') and TrueType ('sfnt') resources. To show numbering conflicts for resources of type 'FONT', first make sure that the Fonts button has been selected. Next, hold down the Option key while clicking the Numbers button. To show numbering conflicts for resources of type 'NFNT', again make sure that the Fonts button has been selected. Then, hold down the Option-Shift keys while clicking the Numbers button. To show 'sfnt' number conflicts, hold down the Shift key while clicking the Numbers button. Conflicts between 'sfnt', 'FONT' and 'NFNT' resources are resolved by FontDirector and are not a concern.

Although ResConflicts will display desk accessory and FKey numbering conflicts, it is not necessary to renumber DAs or FKeys. MasterJuggler automatically handles any DA or FKey numbering conflicts.

Print

Clicking the Print button will print the currently displayed list of conflicts.

Print All

Clicking the Print all button will print a list of all currently available resources of the selected type.

Normally, when the Fonts button has been selected, Print all prints a list of font families ('FOND's.) It is also possible to print lists of old fonts ('FONT's), new fonts ('NFNT's), and TrueType fonts ('sfnt's.) First make sure that the Fonts button has been selected. Next, to print a list of 'FONT's hold down the Option key while clicking the Print all button. To print a list of 'NFNT's hold down the Option-Shift keys while clicking the Print all button. To print a list of 'sfnt's hold down the Shift key while clicking the Print all button.

About

Clicking About opens a window which displays information about ResConflicts. The information includes the ResConflicts release number. A mouse click or key press will remove the window.

Done

Clicking Done or typing enter, return, Command-enter or Command-return closes the ResConflicts window.

Application Pop-Up

The Application pop-up menu, shown in Figure 3-32, allows you to open applications and their documents without returning to the Finder. The method used by the Application pop-up menu to open an application depends on whether or not you are running System 6 MultiFinder or System 7. Without System 6 MultiFinder or System 7, the current application is automatically quit before the new application is opened. Because of this, the current application must have a Quit command in a File menu if the Application pop-up is to open a different application. Under System 6 MultiFinder and System 7, the current application remains open and you may continue to open as many applications as available memory permits.

Under System 6 MultiFinder and System 7, the Application pop-up menu also allows you to switch to any open application. It can even be configured to hide (vanish) the windows of the current application before switching. This is particularly useful when switching to the Finder. Hiding the windows of other applications allows full access to the desktop.

Unlike the Application list, the Application pop-up cannot restart, shut down, or open applications other than those displayed.

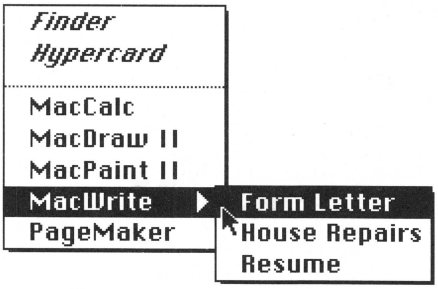

Figure 3-32
The Application pop-up menu

The Application pop-up menu is displayed by pressing its Hot Key sequence and clicking the mouse button. The pointer may be positioned anywhere except the menu bar. Under System 6 MultiFinder and System 7, the menu is divided into two areas. The top, Open Applications area is used to switch between open applications while the lower, Application area is used to open applications and their documents. Without System 6 MultiFinder or System 7, only the Application area is present.

Open Applications Area

The Open Applications area of the menu displays, as choices, the names of all open applications. To switch applications, choose an open application from the Open Applications area. If the vanishing windows feature is on, the windows of the current application will be hidden before switching.

At the top of the Open Applications area, if you are running System 7, MasterJuggler displays Hide, Hide Others, and Show All commands, just like the System 7 application menu. When the Application pop-up menu is displayed, the default menu item will be the frontmost application.

Use the Application list to toggle the vanishing windows feature on and off. The application names in the Open Applications area are italicized if this feature is on.

Application Area

The Application area of the menu displays, as choices, the names of applications added to the Application list. If the application has documents assigned to it in the Application list, they will appear in a submenu next to the application. Applications and documents will be omitted from the menu if the volume on which they reside cannot be found.

Choosing an application or document from the Application area will open it. If the application cannot be opened, for any reason (application or document not found, not enough memory, too many applications open, etc.), the system sound will be played.

Windows Pop-Up

Many applications allow you to work with several windows. One or more of these windows are usually not selectable because they are completely obscured by the windows in front of them. MasterJuggler includes the Windows pop-up menu to allow you to bring to the front any selectable window within the current application.

The Windows pop-up menu is displayed by pressing its Hot Key sequence and clicking the mouse button. The mouse may be positioned anywhere except the menu bar. The menu displays, as choices, the names of the standard windows, excluding the front window, open within the current application. The window that is chosen from the menu will be brought to the front just as if you had clicked on it.

Figure 3-33
The Windows pop-up menu

Section 5: Juggler Utilities

Juggler Utilities is a collection of four indispensable font, DA, FKey, and sound resource utilities: FKey/Sound Mover™, Font/DA Utility™, Resource Resolver™, and Sound Converter™. Juggler Utilities, combined with Font/DA Mover, gives you total control over these essential resources.

Terms and Concepts

Before learning how to use Juggler Utilities, be sure that you have read the terms and concepts section of Chapter 3 - **MasterJuggler**.

FKey/Sound Mover

FKey/Sound Mover is a utility that allows you to add, remove, rename and renumber FKeys and sounds. FKeys and sounds are resources that normally reside in the System files of your startup disks. The FKeys and sounds that you can work with depend upon which startup disk–that is which System file–your Macintosh is currently using. Additional FKeys and sounds can be stored in special FKey and sound suitcase files. The icons of these special resource files are shown in Figure 3-34.

Figure 3-34
Icons representing FKey, and sound files

Unfortunately, there is no standard for FKey and sound file icons so you may encounter files containing these system resources that have different appearances.

You can use FKey/Sound Mover to copy both FKeys and sounds to and from any System file, including the current startup System.

You can also copy FKeys and sounds to or from FKey and sound files as long as the files are not in use. In fact, you can use FKey/Sound Mover to create FKey and sound suitcase files.

One file can contain more than one type of resource. For example, an FKey file can contain both FKeys and sounds.

Moving, Renaming, and Renumbering FKeys and Sounds

FKey/Sound Mover works the same for both FKeys and sounds. Before using FKey/Sound Mover make sure that there is plenty of empty disk space available on the volume on which your FKey or sound file resides.

1) **Select the FKey/Sound Mover icon and choose Open from the File menu, or just double-click the icon.**

The FKey/Sound Mover dialog appears, with the FKey button selected at the bottom. Listed on the left are the FKeys included in the current startup System file. FKeys 3 and 4 are screen save and screen print and are normally unnamed.

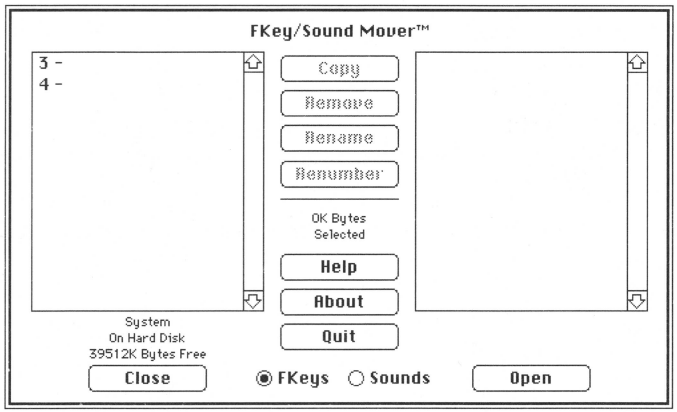

Figure 3-35
A typical FKey/Sound Mover opening dialog

You can hold down the Option key while opening FKey/Sound Mover to select the Sound button and show the sounds in the current startup System file.

Opening one or two FKey or sound files from the Finder will automatically open FKey/Sound Mover. In this case, the list on the left shows the contents of the first file opened while the list on the right shows the contents of the second file opened. If you open a sound file, the Sound button is automatically selected.

2) **Click either the FKey or the Sound button, depending upon the type of resource you wish to work with.**

If the FKey button is selected, the list representing any open file, on the right or the left, contains FKeys only. If the Sound button is selected, the list representing any open file contains only sounds.

3) **Use the Open buttons to present lists of any other closed System, FKey, or sound files.**

Each Open button lets you control which file's FKeys or sounds are displayed in its list. Both the name of the file and the name of the disk it's on are shown below each list. It may be necessary to first click Close to close the file currently displayed.

Whenever you click an Open button, a dialog box appears with a directory of folders, System files, and closed FKey or sound files. Holding down the Option key while clicking the Open button will display all closed files.

4) **Open the file you want to look at by selecting its name and then clicking Open, or by double-clicking its name.**

You can look at and work with any existing System file or closed FKey or sound file.
You can create a new file for storing you own collection of FKeys or sounds by clicking New, naming the file, and clicking Create.

5) **Select the FKeys or sounds you want to copy, remove, rename, or renumber.**

You can select from either list. Click to select a single FKey or sound, hold down the Shift key while you click to select a range of FKeys or sounds. Hold down the Command key while you click to select additional individual FKeys or sounds. The size of the selected resources is displayed as well as the amount of space available on each volume. If compressed sounds are selected, the size displayed is the compressed size.

When a single sound is selected, you may hold down the Option key and click the sound to play it; when more than one sound is displayed, Option-clicking plays the first selected sound.

6) **Click Copy to copy the selected FKeys or sounds in the direction the arrows point, or click Remove, Rename, or Renumber.**

Clicking Copy copies the FKeys or sounds to the opposite file. Compressed sounds are copied to the opposite file as compressed. If an FKey or sound with the same name as the one you selected already exists in the opposite list, it is replaced by the selected FKey or sound. If an FKey or sound with the same number as the one you selected already exists in the opposite list, the newly copied resource is given a new number.

Clicking Remove removes the selected FKeys and sounds from the file they are in. Clicking Rename will display a dialog to type in new names for the FKeys or sounds. Clicking Renumber displays a dialog to type in new numbers for them.

FKey and sound numbers must be in the range of 0 to 32767. For an FKey to be opened from the keyboard it must be in the range of 0 to 9.

7) **Click Quit.**
After quitting, you can drag any FKey or sound file no longer needed to the Trash, or copy or move these files between disks.

Font/DA Utility

Font/DA Utility is an application that allows you to easily manage font and DA resources. With it you can:

- Rename or renumber fonts and DAs.
- Combine members of a font family so only one name appears in the font menu of other font lists.
- Convert old type (FONT) font numbers the new type (NFNT) numbers.

By using Font/DA Utility in conjunction with Font/DA Mover, you can do everything with fonts and DAs that FKey/Sound Mover allows you to do with FKeys and sounds.

Working with Font/DA Utility

Before using Font/DA Utility make sure that there is plenty of empty disk space available on the volume on which your font or DA file resides.

1) **Select the Font/DA Utility icon and choose Open from the File menu, or just double-click the icon.**

The Font/DA Utility dialog appears, with the Fonts button selected at the bottom. The list on the left is used to display the names and numbers of fonts or DAs. You can hold down the Option key while opening Font/DA Utility to select the DAs button.

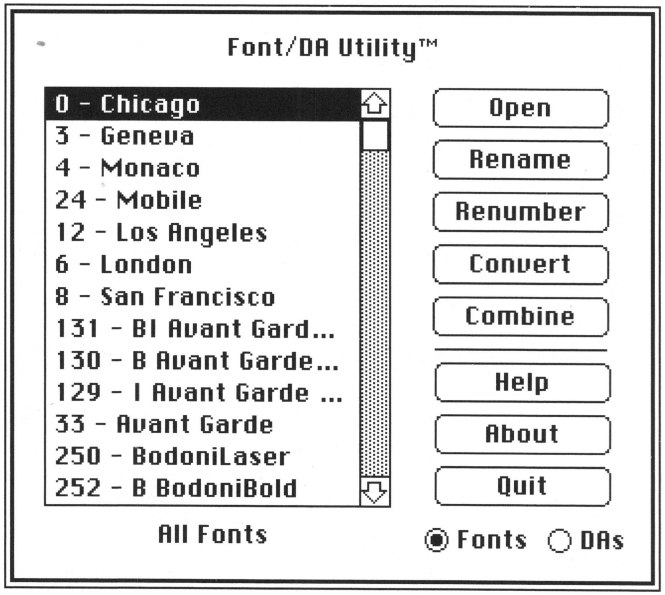

Figure 3-36
Font/DA Utility dialog

2) **Click either the Fonts or the DAs button, depending upon the type of resource you wish to work with.**

If the Fonts button is selected, the list representing any open file contains fonts only. If the DAs button is selected the list contains only DAs.

3) **Use the Open button to present lists of System files and of any closed font or DA files.**

The Open button lets you control which file's fonts or DAs are displayed in the list. The name of the file is shown below the list.

Whenever you click the Open button, a dialog box appears with a directory of folders, System files, and closed font or DA files. Holding down the Option key while clicking the Open button will display all closed files.

4) **Open the file you want to look at by selecting its name and then clicking Open, or by double-clicking its name.**

You can look at and work with any existing System file, or closed font or DA file. You cannot open a locked or protected file or a file on a locked volume. While running under System 6 MultiFinder or System 7, the current System file cannot be opened.

Now that you have opened the file and selected the type of resource you want to work with, proceed to the appropriate section that describes the type of maintenance you would like to perform.

Renaming or Renumbering Fonts and DAs

To rename or renumber fonts and DA's, perform steps 1 through 4 of Working with Font/DA Utility and then follow these steps.

5) **Select the fonts or DAs you want to rename or renumber.**

Click to select a single font or DA, hold down the Shift key while you click to select a range of fonts or DAs. Hold down the Command key while you click to select additional individual fonts or DAs.

6) **Click Rename or Renumber.**

Clicking Rename will display a dialog to type in new names for the selected fonts or DAs.

Clicking Renumber displays a dialog to type in new numbers for the selected fonts or DAs.

DA numbers must be in the range of 0 to 63. It is strongly recommended that DAs always be given numbers in the range of 12 to 63.

If a font already has a number in the range of 0 to 255 its new number must be in the range of 0 to 255. Likewise, if a font already has a number in the range of 256 to 32767 its new number must be in the range of 256 to 32767.

7) **Click Quit.**

Converting Fonts

Font/DA Utility has the ability to convert fonts from the old type (FONT) that allowed a maximum of 255 fonts to the new type (NFNT) that allows you to have thousands of fonts. Old type fonts must have a font number in the range of 0 to 255 while new type fonts must have a number in the range of 256 to 32768.

To convert a font from the old type to new type, perform steps 1 through 4 of Working with Font/DA Utility and then follow these steps.

5) **Select the fonts you want to convert.**

   Click to select a single font, hold down the Shift key while you click to select a range of fonts. Hold down the Command key while you click to select additional individual fonts.

6) **Click the Convert button.**

   The following dialog appears which requires you to assign a new number for the font. Old type fonts must have a font number in the range of 0 to 255 while new type fonts must have a number in the range of 256 to 32768. A unique number in the appropriate range is presented for convenience.

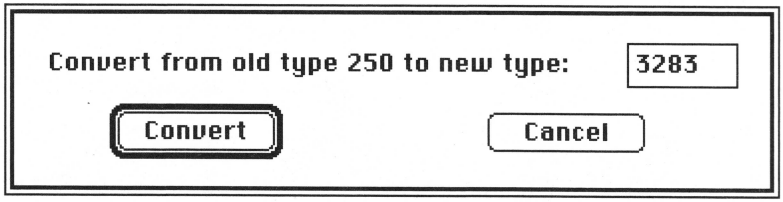

Figure 3-37
Font/DA Utility font convert dialog

7) **Click Quit.**

Combining Fonts

Font menus and other font lists alphabetically display all font family member names.

Figure 3-38
Font menu with all font family names

Font/DA Utility can combine members of a font family so that there is only one entry for the fonts in a font menu or other list of fonts. For instance, Garamond, B Garamond Bold, I Garamond Light Italic, and BI Garamond Bold Italic will appear as just Garamond.

Note: The font numbers used by the three combined family members are now available for other fonts to use. This makes their previous old type number available for other fonts to use. It is recommended that this combine feature be used on large font libraries having font numbering conflicts.

Figure 3-39
Font menu after combining font family names

After combining, B Garamond Bold can be used by simply choosing Garamond and then bolding it. B Garamond Bold will be substituted automatically.

Note: THERE IS NO WAY TO "UNCOMBINE" A FONT. MAKE SURE THAT YOU KEEP A COPY OF THE FONT IN ITS ORIGINAL STATE.

To combine the members of a font family, perform steps 1 through 4 of Working With Font/DA Utility and then follow these steps:

5) **Select a font to be combined.**

Select a SINGLE member of the family to be combined. The Combine button remains disabled if more than one font is selected.

6) **Click the Combine button.**

There is a delay, perhaps a lengthy one, while the family members are combined. When finished, the list of fonts is updated to display a single font from the family.

7) **Click Quit.**

Resource Resolver

Resource Resolver is a utility which allows you to eliminate resource numbering conflicts among fonts or sounds which reside in separate files. In order to understand the use of Resource Resolver it is necessary to be familiar with certain aspects of Macintosh resources.

Warning: Before attempting to resolve resource conflicts, always make copies of the font or sound suitcase files to be resolved. Never use the originals. There is always a danger that a file may be damaged if a resource error occurs.

Resolving Font and Sound Numbering Conflicts

Resource Resolver works the same for both fonts and sounds.

1) **Select the Resource Resolver icon and choose Open from the File menu, or just double-click the icon.**

The Resource Resolver dialog appears. In this dialog there are 12 spaces for open files, along with 12 check boxes with which to specify whether to allow or disallow renumbering for each file. There are also buttons to resolve numbering conflicts, close open files, obtain help, obtain information about Resource Resolver, quit, and choose between font and sound resource types.

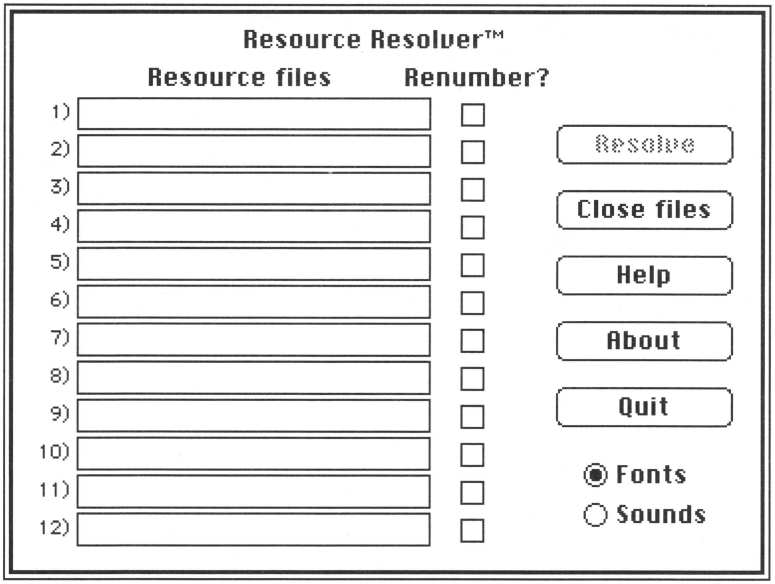

Figure 3-40
The Resource Resolver main dialog

2) **Click either the Fonts or Sounds button, depending upon the type of resource you wish to resolve.**

If the Fonts button is selected, then font numbering conflicts will be resolved. If the Sounds button is selected, then sound numbering conflicts will be resolved.

3) **Double-click on any of the 12 file slots to open a resource file.**

A dialog box will appear with a directory of folders and font or sound files, depending upon which type of resource you have selected to resolve. Open all the files amongst which you wish to resolve numbering conflicts by repeating this procedure for each file.

The order in which files are listed in the Resource Resolver dialog has some bearing upon how they are renumbered. This is described in more detail later in this chapter. If you wish to close any file that is currently open, simply double-click on that file's name in the list of files. If you wish to close all currently open files, click the Close files button.

4) **Select any files for which you wish to disallow resource renumbering by clicking the check box beside the file name.**

Resource Resolver will not renumber resources in the System file, in locked files, or in files on locked volumes.

5) **Click the Resolve button to resolve numbering conflicts.**

When you have opened all the files amongst which you wish to resolve numbering conflicts, you may then proceed to renumber them by clicking the Resolve button. Resource Resolver will then renumber fonts or sounds where necessary.

Resource Resolver starts with the last file listed, renumbering resources in this file if necessary (so long as renumbering has not been disabled for this file.) It will then proceed to each previous file renumbering where necessary and when allowed. While it is renumbering it will display a dialog which tells you that it is doing so. When it has finished, so long as it was able to renumber all resources, it will display a dialog telling you that resource renumbering was successful.

Since there are only 256 available numbers for old fonts, the number of old fonts in the files being resolved should not exceed 256. In like manner, since there are only 32768 available numbers for sounds, the number of sounds in the files being resolved should not exceed 32768. If there should be more than 256 old fonts or 32768 sounds in those files which you are attempting to resolve, Resource Resolver will present a dialog telling you that it cannot resolve all font or sound numbering conflicts. This dialog will give you the option of continuing or canceling. If you choose to continue, Resource Resolver will renumber as many fonts or sounds as possible, but will stop when all numbers have been used. If you elect to cancel, you may then close one or more files and attempt to resolve again.

Note also that Resource Resolver will never renumber a font to be between 0 and 24. These numbers are reserved by Apple for certain standard fonts. However, it will use all other numbers between 25 and 255.

6) **Click Quit.**

Exit Resource Resolver by clicking the Quit button.

Working with Large Numbers of Fonts If you have large numbers of font files with more than 256 old fonts total, then you might want to arrange your fonts into groups of files that contain no more than 256 old fonts. These groups of files may then be resolved successfully. By using the option of not allowing particular files to be renumbered, you may guarantee that certain files may be opened at all times and yet not be in conflict with any of your groups of font files.

In certain extreme situations you may have to experiment in order to find a workable solution. Remember this: when fonts are renumbered, certain applications which rely on font numbers (as opposed to the proper method of relying upon font names) may no longer be able to properly display some previously created documents. These applications search for a font by number. If the font was renumbered, when the application cannot find the font, it will usually display the text in Geneva instead of the original font. For this reason it is generally best to minimize font renumbering.

Handling Errors

If for some reason an error was encountered while Resource Resolver was renumbering resources, it will display an alert telling you of the error along with the number of the file upon which it was working when the error occurred. This type of error should only occur in very extreme cases where free disk space is very low, available memory is low, or perhaps the Macintosh operating system has been corrupted. Under certain circumstances, the file upon which Resource Resolver was working may have been left in an inconsistent state. If this is the case, Resource Resolver will notify you of the possible damage and tell you to replace the file before continuing. Because there is the possibility of damage to files, always renumber copies of your original files, not the original files themselves.

In order to minimize the possibility of file corrupting errors, we suggest that you follow these precautions. If the file contains compressed resources, make sure that there is plenty of empty disk space available on the volume(s) on which the files resides; be sure that memory is not critical (this can be done generally by running Resource Resolver alone from the Finder); finally, always work on a copy of your files.

Sound Converter

Sound Converter is a utility which allows you to convert SoundEdit, SoundWave, or SoundCap digitized sound files to Macintosh® II or HyperCard™ sound resources. Sound Converter also allows you to remove, rename, and renumber sound resources.

Macintosh Sounds

With the advent of sound resources, there are two types of Macintosh sound files: digitized sound files and Apple-standard sound resource files. A digitized sound file contains sound information for a single sound. This type of sound has a limited usefulness. It is produced by programs such as SoundEdit or SoundWave, and is contained in files of type 'FSSD'.

Sound resource files contain one or more sound resources. Sound resources are extremely flexible. They may contain not only digitized sound data, but also other types of sound data, and sound information. For example, a sound resource may describe a sound or sequence of sounds, how fast to play the sound(s), in what order to play a sound sequence, etc. Sound resource files are usually of type 'sfil'.

MasterJuggler plays sound resources, not digitized sound files. However, there are now a number of old style sound files available on bulletin board systems. Juggler Utilities includes Sound Converter to convert these sound files into Apple-standard sound resources. Such converted sounds may then be played by MasterJuggler or even by the standard system beep (by using the Sound Control Panel.)

Getting Started

To get started, first open Sound Converter.

❑ **Select its icon and choose Open from the File menu, or just double-click the icon.**

The Sound Converter dialog appears. In this dialog there are buttons to open both a digitized sound file and a sound resource file and a button to convert the digitized sound file into a sound resource. There are also buttons to rename, renumber, remove, and play sound resources within a resource file.

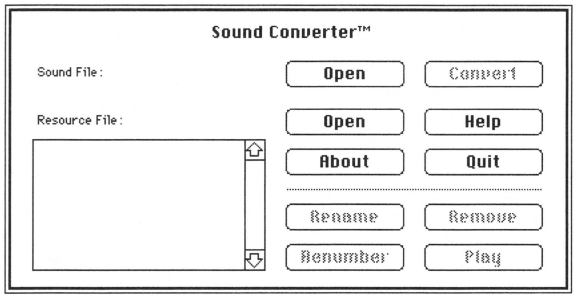

Figure 3-41
Sound Converter main dialog

Converting Digitized Sound Files

When a digitized sound file is converted into a sound resource, the resource is added to an existing or new sound resource file. To convert a digitized sound file, follow these steps:

1) **Use the lower Open button to present lists of System files and of any closed sound resource files.**

The lower Open button lets you control which resource file will be opened. The sound resources in the file are displayed in the list at the lower-left of the dialog. The name of the open file is shown above the list.

Whenever you click the lower Open button, a dialog box appears with a directory of folders, System files, and closed sound files. Holding down the Option key while clicking the Open button will display all closed files.

2) **Open the resource file you want to work with by selecting its name and then clicking Open, or by double-clicking its name.**

You can look at and work with any existing System file or closed sound file. You cannot open a locked or protected file or a file on a locked volume. While running under System 6 MultiFinder, the current System file may not be opened.

You can create a new file for storing converted sounds by clicking New, naming the file, and clicking Create.

3) **Use the upper Open button to present lists of any digitized sound files.**

The upper Open button lets you control which digitized sound file will be converted. The name of the open file is shown in the dialog at the upper-right.

4) **Open the digitized sound file you want to convert by selecting its name and then clicking Open, or by double-clicking its name.**

You can convert any existing digitized sound file.

5) **Click Convert.**

Clicking Convert will display a dialog to type in a name for the sound resource and to select its type and playback rate.

Any Macintosh running System 6.0 can play both Macintosh II and HyperCard sounds. As a result, there is no good reason to choose one sound type over another.

Click the Play button. If the sound does not play at the correct rate, try different rates until the correct rate is determined.

Click Convert to add the sound resource to the open sound resource file. The list in the lower-left of the Sound Converter dialog is updated to display the new sound. The sound resource is automatically assigned a number that is unique within the sound resource file.

Click Done if you decide not to convert the sound.

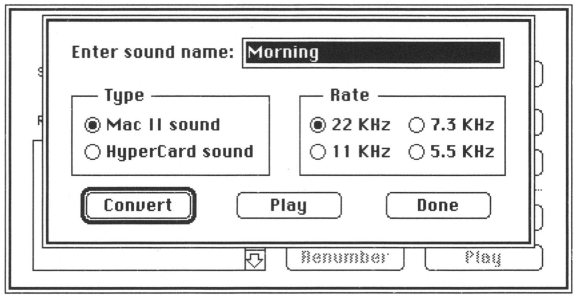

Figure 3-42
Dialog for converting sound files

Removing, Renaming, and Renumbering Sound Resources

Follow these steps to remove, rename, or renumber sound resources in an open sound resource file:

1) **Select the sounds you want to remove, rename, or renumber.**

   Click to select a single sound, hold down the Shift key while you click to select a range of sounds. Hold down the Command key while you click to select additional individual sounds.

   When a single sound is selected, you may hold down the Option key and click the sound to play it; when more than one sound is displayed, Option-clicking plays the first selected sound.

2) **Click Remove, Rename, or Renumber.**

   Clicking Remove removes the selected sounds from the file they are in. Clicking Rename will display a dialog to type in new names for the sounds. Clicking Renumber displays a dialog to type in new numbers for them.

Finishing Up

Once you have finished converting a digitized sound file, you can convert another one or you can quit Sound Converter.

❑ **Click Quit.**

   Exit Sound Converter by clicking the Quit button.

Section 6: Miscellaneous

One Possible Setup

We have found that a setup similar to the one detailed below works quite well with MasterJuggler. Use Font/DA Mover and FKey/Sound Mover to build your custom setup.

In the System file install the following:

Fonts - Chicago, Geneva, Monaco (all sizes of each - DO NOT SPLIT ANY FONT'S SIZES ACROSS FILES!.)

DAs - Tempo and any other DAs required to be in the System file (see the Compatibility List on the MasterJuggler disk.)

FKeys - Leave those that come in the System file.

Sounds - Leave those that come in the System file.

Create files called Standard DAs, Standard Fonts, Standard FKeys and Standard Sounds containing all DAs, fonts, FKeys, and sounds used frequently. Leave these files opened by MasterJuggler at all times.

Create files called Other DAs, Other Fonts, Other FKeys and Other Sounds containing seldom used DAs, fonts, FKeys and sounds. Open these files with MasterJuggler only when necessary.

Store all system resource files in a single folder. With this type of setup, you may easily access DAs, fonts, FKeys, and sounds, and still keep your System folder "clean." In addition we suggest storing the downloadable PostScript font files in the same folder as their corresponding suitcase file.

Compatibility

Great care has been taken to make MasterJuggler compatible with as many desk accessories and other applications as possible. A list of DAs tested under MasterJuggler is contained in the file named Compatibility List on the MasterJuggler disk. Please refer to it regarding DA compatibility questions. If you have a problem with a particular desk accessory, try running it without MasterJuggler. The DA may have a problem with the environment and may not run properly with or without MasterJuggler.

MasterJuggler also runs with most extensions and other code resource types such as QuicKeys, Icon It!, etc. If you should run into a compatibility problem between MasterJuggler and some other extensions, try renaming the other extension with a letter such that it comes alphabetically before (or after) MasterJuggler. If the other extension's name comes after MasterJuggler alphabetically, rename it so that it comes before MasterJuggler (and vice-versa.) This may solve many compatibility issues.

Some special compatibility issues are mentioned next.

Resource Modifying Applications

MasterJuggler is compatible with Font/DA Mover, Fontastic, ResEdit and other similar resource modifying applications. However, these applications cannot access files that are currently open by MasterJuggler. If you attempt to open a file in use by MasterJuggler with one of these applications, the application will give you an error message telling you that the open failed. First close the files with MasterJuggler. Then these applications will be able to access the files normally.

When editing a file that contains DAs, make sure that no DAs are open. Otherwise, editing a DA resource with the same ID as an open DA may cause the wrong resource to be edited.

FullWrite Professional

FullWrite Professional uses non-standard menus. Consequently, the MasterJuggler™ menu does not appear in the Apple menu when running FullWrite Professional. However, you may use the hot keys or MasterJuggler pop-up menu to access any of MasterJuggler's features while running FullWrite.

Microsoft Word, Microsoft Excel, FrameMaker and MacWrite II

Some applications handle windows in a non-standard fashion. Due to this, the MasterJuggler window pop-up menu does not always bring the selected window to the front. There is currently no work-around for this problem.

Sounds

Prior to the Macintosh II and HyperCard, there were a number of different formats for storing digitized sound. Macintosh II and HyperCard sounds are stored as sound resources allowing thousands of sounds to be stored in a single file. The particular resource type that is used is type "snd".

Many of the digitized sounds that can be found on bulletin boards are in the older formats. You may convert these older format files to the newer sound resources by using Sound Converter.

Speeding Up Desk Accessory and Font Sorting

MasterJuggler employs a special sorting technique to speed up menu creation for the apple menu and font menus. However, font menu sorting is an option which can be turned off (in the Options window of the MasterJuggler DA.) If this option is off, the creation of font menus may cause a delay if a very large number of fonts are in currently open files.

Menu Characteristics

You may find when running with a large number of desk accessories, that normally disabled items at the end of the Apple menu may be enabled. This is due to a system limitation. Only the first 31 items in a menu have enable/disable flags associated with them. Consequently, all menu items after the 31st are always enabled. You need not be concerned about this.

Closing Those Stubborn DAs

Some DAs do not close properly. Though the window or menu associated with the desk accessory may disappear, the DA is actually still marked as open in Macintosh memory. You may request MasterJuggler to auto-close such DAs. However, you should always be quite careful when doing this. The bulk of DAs seem to respond properly to such an unexpected close request, but some can actually crash the system. Consequently, you should use the MasterJuggler auto-close facility only on those DAs which you are sure will close properly. Note that if you are running in a single task environment (i.e., not in System 6 MultiFinder or System 7), you can almost always force a close of all open desk accessories by simply changing applications.

Section 7: Error Messages

This section details the error messages that may appear while using MasterJuggler, FontShow, HotSounds, KeyChains, ResConflicts and the Juggler Utilities. When an error occurs, a window is displayed describing the nature of the error. In most cases a solution is suggested.

MasterJuggler Error Messages

- **Out of memory!**

  This error may occur when the MasterJuggler desk accessory is opening. It means that MasterJuggler could not find enough memory to run! If you are running System 6 MultiFinder or System 7, try closing an application; otherwise, try closing a document or two.

- **An error occurred while opening MasterJuggler! Unable to continue.**

  This error may occur when the MasterJuggler desk accessory is opening. Try replacing the MasterJuggler™ file in your system folder. If this doesn't solve the problem, contact ALSoft, Inc. customer support at (713) 353-1510.

- **One or more resources are missing from the MasterJuggler™ file!**

  This error may occur if the MasterJuggler™ file has been damaged in some way. Try replacing the MasterJuggler™ file in your system folder.

- **Error on open of selected file! Unable to access it.**

  This error message may appear when any of a number of errors occur while opening a file. It usually means that there is a low memory condition or perhaps that the file is damaged. Try restarting your Macintosh and opening the file. If the error still occurs, try replacing the file.

- **Unable to allocate needed memory for this Font/DA set!**

  This error indicates a typical out of memory condition. If this error should occur, it means that you should carefully save all documents, then close applications and restart your Macintosh. You are dangerously low on memory if this error occurs!

❑ **Unable to close all DAs in an open font or DA file. Please close the other DAs manually to continue!**

If MasterJuggler cannot close all desk accessories in the selected desk accessory set, it will present this error message. You should try to close the desk accessory(ies) yourself. You may have to quit an application or even restart your Macintosh to clear memory of the offending desk accessory! This can occur only with some very poorly written desk accessories or other desk accessories with very special functions.

❑ **Unable to access the selected file!**

This error message may appear when any of a number of errors occur while opening a file. It usually means that there is a low memory condition or perhaps that the file is damaged. Try restarting your Macintosh and opening the file. If the error still occurs, try replacing the file.

❑ **This file is already in use! Please close it before attempting compression or decompression.**

Resources may not be permanently compressed/decompressed in a file which is open. Close the file first, then compress/decompress it.

❑ **Unable to compress/decompress all fonts and sounds due to a lack of memory!**

This error indicates a low memory condition when you are attempting to compress or decompress fonts and/or sounds. Try restarting your Macintosh and compressing/decompressing again.

❑ **Please close one of the open MasterJuggler files before attempting to open another one!**

This error indicates that you already have 120 suitcase files opened by MasterJuggler. Since 120 is the maximum number of files which you may have open at any one time, you must close one of your open files before attempting to open another one. You can also combine your resources so that they are in 120 or fewer files.

❑ **The number of AppleTalk copies allowed for this version of MasterJuggler™ has been exceeded!**

This copy of MasterJuggler has been installed on more nodes of an AppleTalk network than the version allows. Remove MasterJuggler from the extra nodes or contact ALSoft to purchase a version that runs on the total required number of nodes.

❑ **The selected file (or volume) is locked (or protected)! Please unlock to compress/ decompress.**

The file or volume containing the file is locked, or perhaps protected. Unlock the file or volume first. If the volume is a read-only device (such as CD ROM), MasterJuggler will not be able to compress files on it. First copy the files to another volume, then try compressing.

❑ **Caution! Opening non-standard files may be dangerous! Do not attempt to open this file in any other way!**

The selected file is not a standard font, DA, FKey, or sound suitcase file. Do not try to open this file in any other manner, such as by launching it (if it is an application), etc.

❑ **There are no fonts or sounds in the selected file to compress or decompress!**

❑ **System memory is very low! Please close a file or restart to ensure adequate free memory.**

Opening the last file has reduced available system memory to a dangerously low condition. Restart your Macintosh. System memory will then be increased by MasterJuggler to allow for the newly opened file.

❑ **The file being closed contains fonts. The current application may not handle this change of fonts properly. Close anyway?**

This message is just a warning to remind you that the current application may be expecting the presence of the fonts in the file which you are closing. A few applications may crash if these fonts are not present. You may disable this alert via the Options window in the MasterJuggler desk accessory.

FontShow Error Messages

❑ **Unable to print. A printer error ("error number") has occurred.**

This error may occur when printing a list of fonts with FontShow. It usually means that there is a missing printer resource file. To correct this, make sure that the printer resource for the printer selected with the Chooser desk accessory resides in the system folder.

Other errors, such as low memory or low disk space errors, may also occur. The error number gives the actual cause of the error, and may be interpreted using standard Macintosh error listings found in books like Inside Macintosh.

HotSounds Error Messages

HotSounds produces no error messages.

KeyChains Error Messages

- **Unable to remove this chain!**

  A resource or disk error has prevented the chain from being deleted. Be sure that the MasterJuggler init file is not locked and that the volume on which it resides is not locked. Try restarting you Macintosh if neither the file or volume is locked.

- **Unable to save changes! This may be due to low memory or disk space.**

  MasterJuggler was unable to save the changes just made. This is most likely the result of a low memory or low disk space condition. If there is adequate disk space, try restarting your Macintosh. If not, free up some disk space (by deleting unneeded files) and repeat the operation.

- **Unable to add this chain! Memory or disk space may be low.**

  MasterJuggler was unable to add a new chain. This is most likely the result of a low memory or low disk space condition. If there is adequate disk space, try restarting your Macintosh. If not, free up some disk space (by deleting unneeded files) and repeat the operation.

- **Please delete a chain before attempting to add another! The maximum number of chains is 64.**

  Only 64 chains may be defined at any one time. You have attempted to define a 65th. Delete one chain before defining a new one.

ResConflicts Error Messages

- **Unable to perform this operation due to a low memory condition!**

  There is not enough memory to determine name or number conflicts. Try restarting your Macintosh to clear memory.

FKey/Sound Mover Error Messages

- **The number entered is already taken by another FKey/Sound resource, or is out of range!**

  The number you have entered is either taken by another resource or not in the range of 0 to 32767.

- **Unable to open this file!**

  This error message may appear when any of a number of errors occur while opening a file. It usually means that there is a low memory condition or perhaps that the file is damaged. Try restarting your Macintosh and opening the file. If the error still occurs, try replacing the file.

- **Unable to create this file! The volume may be locked or full, or the file to be replaced may be busy.**

  For one reason or another, FKey/Sound Mover could not create the new file. This can occur if the volume is locked or, when a file is being replaced, if the file is already in use or locked. Low memory or low disk space could also give rise to this error. Check all the above possibilities, remedy the error, then try again.

- **This file (or volume) is locked (or protected)! Changes made to this file will not be permanent.**

  The file or volume containing the file is locked, or perhaps protected. Any changes made to this file will be lost after the file is closed.

- **Unable to complete this operation! The disk may be locked, or there may be a low memory condition.**

  Not all the resources selected could be renamed, renumbered, or deleted. A resource error of some sort occurred, so the process was terminated. This can happen if there is a low memory condition or if there is very little empty space on your disk. Check your disk for empty space. If it is low, free up some space on the disk before proceeding. Otherwise, try restarting your Macintosh to clear memory.

❑ **Unable to complete this operation! A resource error has occurred (possibly a low disk space, or low memory error.) This file has most likely been corrupted. Please replace it.**

While FKey/Sound Mover was in the process of copying resources, a resource error occurred. This error is usually a low memory error. The file into which resources were being copied may have been left in an inconsistent state. Replace the file and try again, after restarting your Macintosh. Make sure that there is plenty of empty disk space on the volume containing the file.

Make sure you always work on a copy of FKey or Sound suitcase files!

❑ **There is not enough room on the destination volume to copy the selected resources!**

The destination volume does not have enough empty space to contain all the selected resources. Copy to another volume with more empty space, or do not try to copy as many resources.

Font/DA Utility Error Messages

❑ **The number entered is either already taken, or is out of range!**

When renumbering a font or DA, the number you have entered is either taken by another resource or is out of range.

DA numbers must be in the range of 0 to 63. It is recommended that DAs always be given numbers in the range of 12 to 63.

If a font already has a number in the range of 0 to 255 its new number must be in the range of 0 to 255. Likewise, if a font already has a number in the range of 256 to 32767 its new number must be in the range of 256 to 32767.

❑ **Unable to renumber! All available DA numbers are used.**

There are already 64 desk accessories in the open file. Consequently, no desk accessory can be renumbered.

❑ **Unable to open this file!**

This error message may appear when any of a number of errors occur while opening a file. It usually means that there is a low memory condition or perhaps that the file is damaged. Try restarting your Macintosh and opening the file. If the error still occurs, try replacing the file.

- **Unable to open this file! It, or the volume on which it resides, is locked (or protected)!**

  The file or volume containing the file is locked, or perhaps protected. Since Font/DA Utility cannot write to this file to renumber or rename resources, it will not open the file.

- **Unable to complete this operation! There may be a low memory condition.**

  Not all the resources selected could be renamed. A resource error of some sort occurred, so the process was terminated. This can happen if there is a low memory condition or if there is very little empty space on your disk. Check your disk for empty space. If it is low, free up some space on the disk before proceeding. Otherwise, try restarting your Macintosh to clear memory.

- **Unable to complete this operation! A resource error has occurred (possibly a low disk space, or low memory error.) This file has most likely been corrupted. Please replace it.**

  This is a serious error. While Font/DA Utility was in the process of renumbering resources, an error occurred. This error is usually a low disk space or perhaps low memory error. More than likely, the file has been left in an inconsistent state. Replace the file and try again, after restarting your Macintosh. Make sure that there is plenty of empty disk space on the volume containing the file.

  Remember to always work on a copy of your file!

Resource Resolver Error Messages

- **Unable to open this file!**

  This error message may appear when any of a number of errors occur while opening a file. It usually means that there is a low memory condition or perhaps that the file is damaged. Try restarting your Macintosh and opening the file. If the error still occurs, try replacing the file.

❑ **There has been an error while resolving font numbering conflicts (perhaps a disk full or out of memory error.) It occurred in the process of renumbering file # "file number." This file may now be damaged. Please replace it before attempting to use it.**

This is a serious error. While Resource Resolver was in the process of resolving numbering conflicts in a particular file (whose number is indicated by "file number" in the message), a resource error occurred. This error is usually a low disk space or perhaps low memory error. More than likely, the file has been left in an inconsistent state. Replace the file and try again, after restarting your Macintosh. Make sure that there is plenty of empty disk space on the volume containing the file.

You should always resolve fonts using a copy of a font file.

❑ **This file (or volume) is locked (or protected)! Renumbering will be disabled for this file.**

The file or volume containing the file is locked, or perhaps protected. Since Resource Resolver cannot write to such a file (or volume), renumbering is disabled for this file.

❑ **There has been an error while resolving sound numbering conflicts (perhaps a disk full or out of memory error.) It occurred in the process of renumbering file #"file number."**

While Resource Resolver was in the process of renumbering sounds to resolve numbering conflicts, a file or resource error occurred, so the process was terminated. This can occur if there is a low memory condition. Try restarting your Macintosh to clear memory.

❑ **There were no numbering conflicts to be resolved!**

There was no need to renumber any fonts/sounds because there were no numbering conflicts in the open files for the resource type selected.

Sound Converter Error Messages

❑ **The name entered is already taken by another sound!**

The name entered for this sound is already assigned to another sound resource. Use another name.

❑ **The number entered is already taken by another sound!**

The number entered for this sound is already assigned to another sound resource. Use another number.

❑ **Invalid sound number!**

Sound numbers must be between 0 and 32767.

❑ **Unable to open this file!**

This error message may appear when any of a number of errors occur while opening a file. It usually means that there is a low memory condition or perhaps that the file is damaged. Try restarting your Macintosh and opening the file. If the error still occurs, try replacing the file.

❑ **Unable to open this file! It, or the volume on which it resides, is locked (or protected)!**

The file or volume containing the file is locked, or perhaps protected. Since Sound Converter cannot add sounds to the file, it will not open it.

❑ **Unable to complete this operation! There may be a low memory condition.**

A resource error of some sort occurred, so the operation was terminated. This can happen if there is a low memory condition or if there is very little empty space on your disk. Check your disk for empty space. If it is low, free up some space on the disk before proceeding. Otherwise, try restarting your Macintosh to clear memory.

❑ **Unable to read this sound. Either a low memory condition exists or a read error occurred.**

The sound file could not be read. This was due to either a low memory condition or a disk read error. Try restarting your Macintosh to clear memory. If the error persists, try copying the file to another disk, and using the copied file.

❑ **Unable to create this file! The volume may be locked or full, or the file to be replaced may be busy.**

Section 8: Trouble-Shooting

This section presents many of the problems commonly encountered by MasterJuggler users, along with solutions to these problems.

❑ **Problem: I can't find my system folder.**

Solution: The system folder is the folder which contains the two files named "System" and "Finder" on the current startup disk. In later versions of the Finder (version 6.0 and later), this folder is marked by a small Macintosh icon, which appears in the middle of the folder icon.

❑ **Problem: The MasterJuggler icon does not appear when I startup my Macintosh.**

Solution: First, check to make sure that the MasterJuggler™ file is in the system folder. If it is not, copy it to the system folder. If it is, one of two other problems may exist. If after startup, the MasterJuggler™ menu appears in the apple menu, then the startup icon is not appearing because of the current MasterJuggler Options settings. Open the MasterJuggler DA, then click the Options button in the MasterJuggler DA main window. When the Options window appears, turn on the option which causes the startup icon to appear.

If after startup, the MasterJuggler™ menu does not appear in the apple menu, then the MasterJuggler™ file has apparently been damaged. Replace it with a new copy in the system folder.

❑ **Problem: The MasterJuggler icon appears at startup with an "X" through it**.

Solution: In this situation, there are two possibilities. First, the key which causes MasterJuggler loading to be bypassed (such as the caps key) may be being held down (perhaps inadvertently.) If so, return the key to its up position, then restart your Macintosh.

Another possibility is that a wrong version of the system is currently installed on your startup disk. MasterJuggler requires System 6.0 or later. If your System has an earlier version number, replace it with a newer version.

❑ **Problem: A file I have selected with MasterJuggler was not remembered the next time I restarted my Macintosh.**

Solution: Either the file was renamed or moved to a different folder, the volume on which the file resides was not available at startup, the MasterJuggler™ file was replaced or renamed, or the file was opened on a temporary basis.

If MasterJuggler does not remember any files on restart that have been opened, check the MasterJuggler™ file in the system folder to verify that the "Locked" check box in the "Get Info" window has not been clicked. This file should never be locked.

❑ **Problem: One or more Hot Keys don't work, but the MasterJuggler desk accessory does.**

Solution: There are a number of reasons why the Hot Keys may not appear to be working. First, check to see that the Hot Key was defined as you remember it, by looking in the MasterJuggler Options window.

Other possible reasons for the Hot Keys not working are that a particular Command key sequence has been multiply defined, that is more than one Hot Key has the same sequence assigned to it. If this is the case, only the first Hot Key with this assignment will be accessible via the Command key sequence. The other Hot Key(s) should be reassigned.

If you are currently running one Hot Key, the other Hot Keys will not respond. This can also occur when the MasterJuggler DA is opened from the DA list. Since the DA list has not actually been exited, the other Hot Keys will not respond.

Another possibility is that the Command key sequence may be in use by some other utility such as QuicKeys™ or Tempo™, which "uses" the sequence before MasterJuggler can respond to it. If so, redefine the Hot Key.

Finally, one other possibility is that the keyboard may have been replaced since the Hot Keys were defined. If so, simply redefine the Hot Key(s).

❑ **Problem: I can't assign Command - Shift - number (0-9) to the Hot Keys.**

Solution: Command - Shift - number sequences are generally reserved for activating FKeys. Whether or not you can assign Command - Shift - number to a Hot Key depends upon the environment under which you are running. The Macintosh system in many circumstances "catches" these particular Command key sequences even though no particular FKey may correspond to them. In these cases, they are never reported to applications, etc., so they can never be assigned to Hot Keys.

❑ **Problem: When I assign certain keypad keys or the arrow keys to the Hot Keys, the Options window shows me something slightly different than I entered.**

Solution: The arrow keys and certain keypad keys (=, /, -, +) show up slightly different than when entered because the system remaps these keys to appear as they did on the old Macintosh 128K keypad. Then, the arrow keys were on the keypad, and the =, /, -, and + keys were entered by pressing Shift-arrow key. This slight difference can be ignored.

❑ **Problem: The Hot Keys only beep when activated.**

Solution: This will occur in a number of situations. The DA or Application list Hot Keys may not be activated when a dialog window is in front. Or, memory may be so low that a hot key couldn't be loaded. Another possibility is that the hot key itself could not be found. Also, all the Hot Keys will only beep if the Macintosh window manager has not been initialized (this can occur in certain very rare circumstances.)

❑ **Problem: I can't open any DAs while running System 6 MultiFinder. Every time I select a DA all I get is a beep.**

Solution: This will occur in one of two situations. The application "DA Handler" (part of the system disk from Apple Computer) is not in the System folder of the current startup disk or there is not enough memory in the Macintosh to open the DA Handler application.

❑ **Problem: I can't open a DA from the DA list, when the list is brought up in front of MasterJuggler.**

Solution: When the DA list is brought up in front of the MasterJuggler desk accessory, it is in a special preview mode. In this mode you may see all the currently available DAs, but you may not open any of them.

❑ **Problem: When I try to access a font file which was previously compressed, I get a system error.**

Solution: In order to access compressed font files, MasterJuggler must be loaded. If you wish to access these fonts without MasterJuggler loaded, decompress them first using the decompress option in the MasterJuggler DA main window.

❑ **Problem: When I try to access a sound file (which was previously compressed) by using the Control Panel, all the sounds only play the system beep sound.**

Solution: In order to access compressed sound files, MasterJuggler must be loaded. If you wish to access these sounds without MasterJuggler loaded, decompress them first using the decompress option in the MasterJuggler DA main window.

❑ **Problem: My font file didn't compress as much as I thought it would when I used the MasterJuggler compression function.**

Solution: The amount of compression gained in a font file depends upon a number of factors, including font size and type (bitmap vs. outline.) In general large fonts compress more than small ones, and bitmap fonts compress more than outline fonts. Our experience has shown that an average of about 30-40% is obtainable for most sets of fonts.

❑ **Problem: My sound file didn't compress as much as I thought it would when I used the MasterJuggler compression function.**

Solution: The amount of compression gained in a sound file depends upon the types of sounds being compressed. In general, digitized sounds compress considerably more than other types of sounds. Our experience has shown that an average of about 15-25% is obtainable for most sets of sounds.

❑ **Problem: I can't find my file in the MasterJuggler Available files list.**

Solution: The file may already be open (perhaps by MasterJuggler itself.) Another possibility is that the file has the wrong type. MasterJuggler recognizes the types ffil, DFIL, sfil, tfil, FKEY, and FKAR.

- **Problem: When I select "Show all file types," some of my files still do not appear in the main MasterJuggler window.**

  Solution: The main MasterJuggler DA window will only show those files which are not in use and which have resources associated with them. If the file is already open by MasterJuggler, or some other application such as Fontastic, then it will not appear in the main window. In this case, the solution is to close the file before attempting to open it with MasterJuggler. Other files may not appear because they are solely data; that is, they have no resources associated with them. These files can not be opened by MasterJuggler.

- Problem: I get an error message when I try to open a MasterJuggler file with applications such as Font/DA Mover, Fontastic, or ResEdit.

  Solution: You may not open a file that is currently open by MasterJuggler with another application. First close the file with the MasterJuggler DA, then open it with the other application.

- **Problem: When I select a font in an application, another font is displayed in its place.**

  Solution: This is an indication that there is a font numbering conflict between these two fonts or that the suitcase file containing the font has been closed. In general, you may resolve a conflict by moving the two fonts into the same file (with Font/DA Mover), by using the Resource Resolver, or by renumbering one of the fonts (with Font/DA Utility.)

- **Problem: When I select a sound from the Sound list, another sound is played in its place.**

  Solution: This is an indication that there is a sound numbering conflict between these two sounds. In general, you may resolve this conflict by moving the two sounds into the same file or by renumbering one of the sounds (with FKey/Sound Mover or Sound Converter.)

- **Problem: I have more than one DA (or font, FKey, sound) with the same name. Why can I only access one of them?**

  Solution: A search for a resource is quite often performed by using the resource name. The first resource found with that name is the one that is used. You may overcome this limitation simply by renaming the appropriate resource (with Font/DA Utility or FKey/Sound Mover.)

❑ **Problem: On my Macintosh II the system sound doesn't sound as good as it used to before I installed MasterJuggler.**

Solution: You may turn off the MasterJuggler system sound play by an option in the Options window. This is generally used for machines (Macintosh Plus and Macintosh SE) which don't have Macintosh II ROMs and are not running System Software Version 6.0 or later, to enable them to play Macintosh II sounds.

❑ **Problem: When I turn off sound play, some of my sounds play at the wrong speed.**

Solution: You are most likely using System Software Version 7. This system version has a problem playing some older sounds that played correctly under System 6. To play these sounds, turn sound play back on.

❑ **Problem: When I attempt to play a sound in the Sound list, I only hear the regular system beep.**

Solution: This will happen if you are running on a Macintosh Plus or SE, are using System Software earlier than version 6.0, and you do not have the Install sound play option turned on. Simply open the MasterJuggler DA main window, bring up the Options window and select Install sound play.

This may also occur if there is a resource error (such as a low memory condition) when the attempt is made to play the sound, or if the sound itself is not a standard Macintosh sound resource. In these cases, try restarting the Macintosh and playing the sound again. If the problem persists, the sound is probably not a standard sound resource.

❑ **Problem: Some sounds do not sound the same on the Macintosh Plus (or SE) as they do on the Macintosh II when the sound play option is on.**

Solution: MasterJuggler allows you to play most, but not all, of the Macintosh II sounds properly. If you are using System Software Version 6.0 or later, you may turn off the sound play option. Most sounds are playable by the newer systems even on a Mac Plus or Mac SE.

❑ **Problem: Some games either do not run properly or bomb when MasterJuggler is loaded.**

Solution: This is purely a problem with the games. Dark Castle, for instance, will not run when any of a number of extensions are running (MasterJuggler being one.) Falcon will bomb when any of a number of extensions are running (again, MasterJuggler is one.) You may generally circumvent this problem by turning on the 'Load in system heap at start' option in the MasterJuggler DA Options window.

❑ **Problem: When I open a file in MasterJuggler, it appears in the open files list with a diamond before its name.**

Solution: You have accidentally held down the Command key when opening a file. A file that is opened with the Command key down is opened temporarily, that is, it will not be reopened when you restart your Macintosh. This temporary status is designated by a diamond before the file name in the open files list. Simply reopen the file, making sure to keep your hand off the Command key.

❑ **Problem: When running MicroSoft Excel or Word, MacWrite II or FrameMaker, the window pop-up menu doesn't always bring a window to the front.**

Solution: Some applications handle windows in a non-standard fashion. There is currently no work-around for this problem.

❑ **Problem: When running FullWrite Professional, the MasterJuggler™ menu does not appear in the Apple menu.**

Solution: FullWrite Professional uses non-standard menus. Consequently, the MasterJuggler™ menu does not appear in the Apple menu. Use the hot keys or MasterJuggler pop-up menu to access MasterJuggler's features.

❑ **Problem: When printing to my LaserWriter with FontShow I get a printer error.**

Solution: The LaserWriter may not have enough memory to print a page with each line containing a different font. It may be necessary to limit the page area when printing with large fonts due to the limited memory within the LaserWriter. It may also be necessary to limit the number of fonts per page by printing in landscape. You can also try printing only one page of fonts at a time. If LaserWriter memory problems persist, you can always print selected fonts a few at a time.

❑ **Problem: My system sound or some other sound doesn't play.**

Solution: If no sound at all is played, then more than likely, you have assigned 'None' to the sound setting in question. If you wish to have a sound played for the setting in question, assign a particular sound, a random sound, or the default sound.

❑ **Problem: The Command-click combinations I use for the pop-up menus conflict with certain applications.**

Solution: You may adjust the Command-click combinations for the MasterJuggler pop-up menus in the Options window of the MasterJuggler DA. You may even make the pop-ups inactive to guarantee that no conflicts will occur.

❑ **Problem: When I try to start an application with the application list, the application doesn't launch.**

Solution: This may occur for a number of reasons. If you are running under System 6 MultiFinder or System 7, this generally means that there was not enough memory to start another application. Quit an application and try again. If this does not solve the problem, then it means that for some other reason System 6 MultiFinder or System 7 could not start the application.

If you are not running under System 6 MultiFinder or System 7, then the application which you are using probably lacks a standard File menu with the standard Quit item. Both of these are necessary to start an application with the application list.

❑ **Problem: When I try to start an application with the application pop-up menu, the application doesn't launch.**

Solution: This may occur for a number of reasons. If MasterJuggler could not find the application (or document) which you are attempting to start, then the application pop-up menu will simply beep and exit.

If you are running under System 6 MultiFinder or System 7, this generally means that there was not enough memory to start another application. Quit an application and try again. If this does not solve the problem, then it means that for some other reason System 6 MultiFinder or System 7 could not start the application.

If you are not running under System 6 MultiFinder or System 7, then the application which you are using probably lacks a standard File menu with the standard Quit item. Both of these are necessary to start an application with the application list.

Chapter 4

MultiDisk

Introduction:

What Is MultiDisk?

MultiDisk is ALSoft's innovative disk partitioning software. The name MultiDisk was chosen because MultiDisk enables you to divide your original hard disk into multiple new disks.

MultiDisk is the safest, most flexible, full-featured disk partitioning software available for the Macintosh. MultiDisk is the safest way to add virus protection, data safety and security. MultiDisk comes with an additional product called MultiDisk Partition Recover. With MultiDisk Partition Recover, your data can often be recovered, even if you have directory damage from some other source. There is no safer place for your data than a MultiDisk partition.

Grouping your files into distinctly separate partitions which contain fewer files helps you achieve faster file access, greater file protection against directory damage and virus attack as well as improved overall disk performance. With MultiDisk, you can even assign a separate password to each partition, and you can assign automatic quick-encryption to any partition to achieve an even higher level of security.

If you are on a network and use AppleShare, System 7 File Share or TOPS, you can also remotely access partitions opened on the file server. If you are the network administrator in an environment with lots of classified data, this means you can selectively restrict access without locking network users out of the entire hard disk. You can also restrict the amount of disk space that each group can use on your server. Simply determine the amount of disk space for each group and set the partitions that they can access to the appropriate sizes. This eliminates one department using the majority of available disk space on your server. With MultiDisk, the network administrator can control not only the access privileges of each group, but also the amount of disk space that each group uses.

MultiDisk can partition any HFS disk. What's more, MultiDisk can also easily convert partitions created by less flexible partitioners like SUM or Hard Disk Partition.

What MultiDisk Can Do For You

Speed Your Disk Performance

When it comes to hard disks, size can determine computer speed and capacities for working with certain types of software. That is especially true for memory intensive files like graphics and databases. As your disk gets full, you will notice more sluggish performance. Each time you quit an application, you will begin to notice that it takes longer for the Finder to update the desktop. Time is important to you – partitioning can help improve your hard disk's performance.

MultiDisk minimizes the number of files you work with at any given time. With MultiDisk, you can place logical groups of files into separate MultiDisk partitions. Logical grouping of files can include separate partitions for applications files, word processing documents, spreadsheets, or graphics files.

Partitioning with MultiDisk enables you to isolate your applications files from your information files, minimizing the effects of the fragmentation that occurs every time one of your information files changes size. As a result, MultiDisk enables you to work with just the files you need in just the partition you need improving file access times and maximizing your hard disk's performance.

More Potent Virus Protection

Computer viruses justifiably concern all computer users. Just as organic viruses can multiply and attack a vulnerable human immune system, computer viruses can incapacitate the unprotected Macintosh. As part of its attack, a computer virus will propagate itself by adding its "code" to your Macintosh System file or to your applications – often causing system crashes and data loss.

Until computer viruses are wiped out completely, the only sure way to protect against virus infection is to "lock" your entire hard disk. But, locking an entire hard disk is impractical if not impossible in a real work environment. The most practical alternative is disk partitioning with MultiDisk. Place all of your applications in a locked partition. A virus cannot add its code to an application stored in a locked or write-protected disk. As you add other applications, simply unlock and re-lock the partition when you are through.

Ensure Information Safety

A computer crash can occur without warning. Most crashes occur when your directory file becomes damaged or corrupted in some way. Each MultiDisk partition will appear in the directory file of your hard disk as one file, regardless of the number of files you actually have saved inside of it. Each MultiDisk partition also has its own independent directory file which reflects its own contents. As a result, any damage that occurs to the directory file of a partition will have NO EFFECT on the directory files of each of your other MultiDisk partitions. So, even if serious directory damage strikes, you need only recover the files stored in the affected partition and not the entire hard disk.

Some utilities on the market offer limited success in repairing important damaged directory files. Most of the time, however, most of the files are gone forever. This is one reason why ALSoft developed MultiDisk and MultiDisk Partition Recover. With MultiDisk Partition Recover, you can often recover data from deleted or damaged MultiDisk partitions, or damaged hard disks– data that would have been lost if it had not been stored in a MultiDisk partition.

Increased File Security

You don't have to be in the spy business to want certain important files to be "for your eyes only." Yet in many office situations, unauthorized people have unrestricted access to confidential files and other people's computers.

MultiDisk partitions can be configured to allow access to your confidential files only when provided with a password that you have defined. For an even higher level of security, MultiDisk also enables you to quick-encrypt everything within a partition. This feature essentially makes the information appear "scrambled", and it was specifically designed to foil those persistent individuals who might try to scan your disk for information. For your convenience, MultiDisk will also automatically quick-decrypt information for all authorized users of your partition.

Compatibility

MultiDisk is compatible with System Software Version 6.0 or greater. MultiDisk supports any HFS disk attached to any Macintosh. What's more, MultiDisk is completely compatible with System 7.

Section 1: The Fundamentals Of Disk Partitioning

The first step in getting started is understanding disk partitioning. Below are some basic guidelines and helpful suggestions about how to divide your files and what kinds of partitions to create. Taking a little time to learn the fundamentals now will make it easier for you to create useful partitions later.

Grouping Files Logically

Every computer uses system files, application (program) files and information (data, document) files. These files can be broken into groups of (1) files that can't be put into a partition (system files), (2) application files and (3) information files.

It is easy to separate application and information files into logical groups for placement into partitions. MultiDisk lets you further subdivide your application files and information files based upon activity. Frequently used files should be grouped separately from those files you use only occasionally. And if you still have some files that you do not use even occasionally, you may want to store these seldom used files on diskette, thereby saving disk space and protecting the data from viruses.

System Files

All of your system files should be located in the System Folder of your startup disk. This enables them to be used each time you startup your Macintosh. Examples of the kinds of files that should stay in the System Folder are: Apple's system files, Control Panels, Chooser Extensions, System Extensions, other extensions and various applications' preference files. These files must be kept in the System Folder and cannot be put into a MultiDisk partition. Placing them inside of a partition would make them unavailable to you at startup time. You cannot startup your Macintosh from a partition because the startup files your Macintosh needs would not be found on a partition.

Application Files

You should create at least one MultiDisk partition for your applications and any associated files. If you have lots of applications, and they fall into both the frequently used and occasionally used groupings, you may want to put them into 2 separate partitions.

After you create your applications partition(s), you should then lock the partition(s). Next, remember to set your frequently used applications partition to be automatically available to you at startup.

Most applications will work perfectly after their partition has been locked. But the best way to be sure is to test. Start each application. Then try to work with a test document from it. If the application does not run properly from a locked partition, place these applications along with any associated files in a folder on your startup disk or a separate unlocked partition.

Information Files

Next, create at least one MultiDisk partition for your information files. Again, if you have a lot of information files, they may also fall into both frequently used and occasionally used groups. If they do, you may wish to create a partition for each group. There's no practical limit on the number of partitions you can create on your hard disk. In fact, MultiDisk even lets you create partitions within partitions.

Set the partition containing your frequently used group of information files to be automatically available at startup. If there is any sensitive information which resides in these files, you may also want to set a Password and/or Quick-Encryption for the partition. As you work with MultiDisk partitions, the best configuration for your particular work style and business will become evident.

Section 2: Basic Terms And Concepts

This chapter provides helpful background information on MultiDisk. The terms and concepts will be important in later chapters on using MultiDisk.

Disks
Disks are the magnetic media on which information is stored. There are both floppy disks, such as the 3.5-inch disk which MultiDisk comes on, and hard disks, like the Apple Hard Disk 20SC. A disk must be initialized before it can be used. When a disk is initialized, a part of it is set aside for a directory.

Directory
The directory is used to store the number, names, locations, and sizes of files. Until you put files on a disk, the directory is empty.

Encryption
Data on partitions can also be encrypted. Encryption is a kind of scrambling device which prevents advanced users with low-level disk tools from bypassing a password and retrieving files from a partition.

Free Space
Any area of a volume that is available to be allocated to files or the directory is called free space.

Opening Partitions
A partition must be opened before it can be used. Partitions can be opened manually with the MultiDisk DA or they can be configured to open automatically when their parent volume is opened.

Partitions
MultiDisk is a utility which allows you to allocate some or all of the free space of a volume to create additional volumes called partitions. The original volume is called the root or parent volume. Partitions are used exactly like their parent volumes. In fact, partitions are represented on the Finder desktop with the same icon as their parent volume.

Partition Size
The size of a partition is limited only by the amount of free space on its parent. If you make a partition too small, it can be resized later. Sizes are specified in kilobytes (K) or megabytes (MB.) One kilobyte equals 1024 bytes while one megabyte equals 1024 kilobytes.

Password Protection
Individual partitions can be protected from unauthorized access by a password. Without the correct password, you cannot open, modify, or delete a partition.

Volume

An initialized disk is called a volume. Because a disk frequently contains only one volume, the terms disk and volume are frequently used interchangeably.

Section 3: Using MultiDisk

This section describes how to use MultiDisk. Included are step-by-step instructions on how to Open, Modify, Delete and View your partitions.

MultiDisk Desk Accessory - The Command Center

The MultiDisk Desk Accessory (DA) is the Command center for MultiDisk. All interaction with MultiDisk takes place through this DA.

Opening the MultiDisk DA

To open the MultiDisk DA simply choose MultiDisk from the Apple menu. The MultiDisk DA window, similar to the one in Figure 4-1, will appear on the screen.

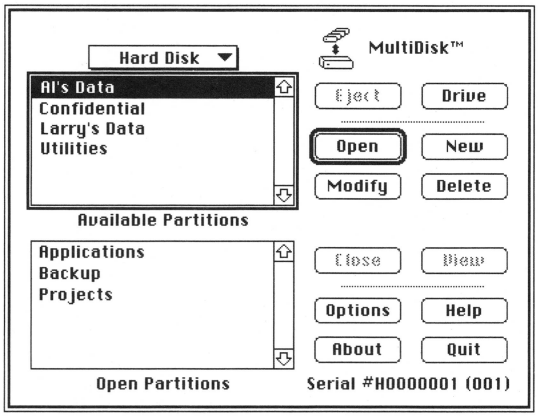

Figure 4-1
A typical MultiDisk DA window

Available Partitions List

This section of the window shows, in alphabetical order, a list of the partitions on the current volume that can be opened by MultiDisk. Partitions in the Available Partitions list can be selected by clicking them or by typing one or more characters of the partition's name. The up and down arrow keys can also be used to select partitions in the Available list.

A solid diamond character proceeding the partition name indicates that the partition was created by either Hard Disk Partition from FWB Software or HD Partition which is part of SUM. You will be given the opportunity to convert these partitions into a MultiDisk partition by opening them with the MultiDisk DA.

By default, the current volume is the current startup disk. The name of the current volume is displayed immediately above the list in a box. When the box is pressed, it displays a pop-up menu containing the names of all selectable parent volumes. The name of the current volume is checked. Choosing a volume name causes it to become the current parent volume.

Open Partitions List

This section of the window displays, in alphabetical order, the names of all the partitions that have been opened by MultiDisk. When a partition is opened, its name is removed from the Available Partitions list and is placed in the Open Partitions list. Clicking the partition or pressing the up and down arrow keys will select partitions in the Open Partitions list.

Note About The Partition Name: If a hollow diamond character precedes the partition name, it indicates that the partition could not be completely opened. The partition is accessible to file recovery programs such as Disk First Aid but it will not appear on the Finder desktop.

Eject

If the current volume is a 3.5-inch disk, you can click this button to eject that disk. Another volume, if there is one, becomes the current volume.

Drive

Use this button to switch volumes. Each time you click Drive another volume becomes the current volume. You can also type Command – left arrow or right arrow to switch volumes.

Open

This button opens the currently selected partition in the Available Partitions list. You can also open a partition by double-clicking its name in the list.

New

Use this button to create partitions on the current volume.

Modify

When this button is clicked, a dialog box will appear which allows you to change the attributes of the currently selected partition in the Available Partitions list. MultiDisk will only allow you to modify a partition after you have given the correct password, if the partition has one.

Delete

Use this button to delete a partition in the Available Partitions list. MultiDisk will only allow you to delete a partition after you have given the correct password, if the partition has one.

Close

This button will close the currently selected partition in the Open Partitions list. You can also close a partition by double-clicking its name in the list.

View

This button opens a dialog box which will display the attributes of the currently selected partition in the Open Partitions list.

Options

Clicking the Options button opens a dialog box which will allow you to alter the way that MultiDisk operates.

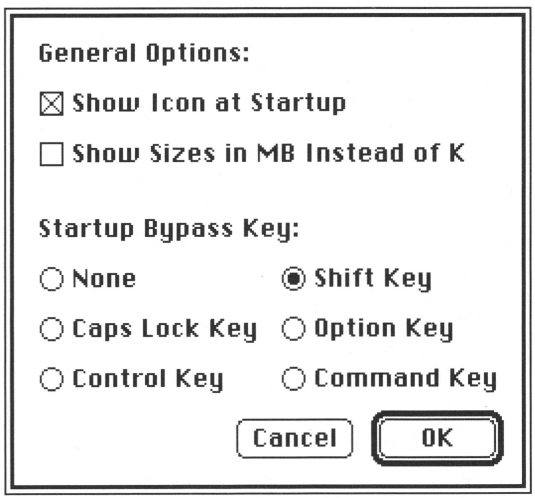

Figure 4-2
The MultiDisk DA options dialog

The following options are available:

- **Show Icon at Startup**
  This option determines whether the Loaded icon will be displayed at startup.

- **Show Sizes in MB instead of K**
  If the option is checked, numbers referring to the size of a partition will be displayed in megabytes instead of kilobytes.

- **Startup Bypass Key**
  Choose one of the buttons listed under this label to select the key that will cause MultiDisk to bypass loading. Pressing this key while the Macintosh is starting will prevent MultiDisk from loading and will cause the Not Loaded icon to be displayed.

About

Clicking About opens a window which displays information about MultiDisk. The information includes the MultiDisk release number, ALSoft mailing address, and telephone numbers. A mouse click or key press will remove the window.

Help

Clicking Help will display a window containing abbreviated instructions for using the MultiDisk DA. A mouse click or key press will remove the window.

Closing the MultiDisk DA

To close the MultiDisk DA you need only click the Quit button. You can also type Command - . (period) or Command – q to close the Multidisk DA.

Section 4: Working With Partitions

Creating Partitions

Now it's time to actually create partitions. MultiDisk places no limitations on your creativity when it comes to partitions. MultiDisk will create partitions only on HFS volumes.

To create a partition, follow these steps:

1) **Choose MultiDisk™ from the Apple menu.**

   The MultiDisk DA window will appear with the current startup disk as the current volume.

2) **Click the Drive button until the volume on which you wish to create the partition becomes the current volume.**

   The name of the current volume is displayed immediately above the Available Partitions list.

   Pressing the Command right-arrow or Command left-arrow keys is equivalent to clicking the Drive button.

Note About Partitioning Partitions: MultiDisk has been specially designed to allow partitions to be partitioned. There is virtually no limit to the number of partitions that can be created inside of partitions.

3) **Click the New button.**

   A dialog box like the one in Figure 4-3 appears.

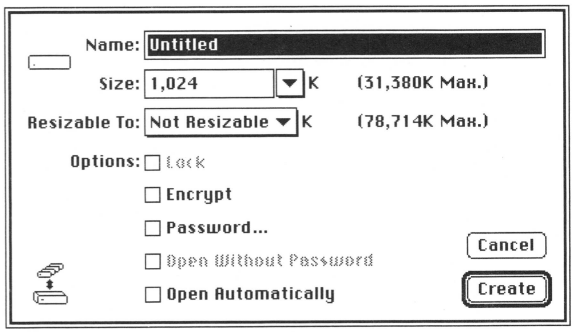

Figure 4-3
Dialog for creating partitions

4) **Name the partition by typing up to 27 characters on the line labeled "Name."**

This name is used to identify the partition in the MultiDisk DA and on the Finder desktop. To avoid confusion, be sure to give partitions different names.

5) **Select the line labeled "Size" and type the size of the partition.**

The size is limited only by the amount of free space on the current volume. Directly to the right of the Size field there is a box containing a downward-pointing triangle. Pressing this box displays a pop-up menu containing suggested sizes.

The current maximum size that the partition can be sized to (available free space) is displayed as the last item in the Size pop-up menu and to the far right of the Size field.

Choosing one of the sizes from the size pop-up menu places that size into the Size field. You can, of course, still type a different size into the Size field.

6) **Press in the box labeled "Resizable to". Select from the pop-up menu the maximum size that the partition may be resized to.**

This is the maximum size that the partition can be resized to without erasing the partition. The maximum value that can be selected is the total usable space on the parent volume. This maximum size is displayed as the last item in the Resizable To pop-up menu and to the far right of the Resizable To field.

Pressing on the Resizable To box displays a pop-up menu containing the allowable Resizable To values. You can choose from "Not Resizable", 1, 2, 4, 8, and 16 megabytes in addition to multiples of 32 megabytes. The total Resizable To values of all partitions can exceed the size of the parent volume.

Why Partition Size Is Important

The smaller the Resizable To value you choose, the more efficient the Macintosh is at storing information within the partition. A partition resizable to 32 megabytes uses more partition space for the directory than a partition resizable to 8 megabytes. Therefore, new partitions of the same size will have different amounts of free space depending upon the value of the Resizable To field.

7) **Click the check boxes of the options you wish to activate.**

You may choose (activate) any of the following options:

- **Lock** - Activating this option will prevent the partition from being written to. This option is dimmed (not available) until the partition is created.

- **Encrypt** - Activating this option will encrypt the entire contents of the partition.

- **Password** - Activating this option will cause a dialog box to appear in which you can type a password of up to 21 characters for the partition. When typing, the characters are displayed as diamonds. After typing the password and clicking OK you will be asked to reenter the password for confirmation. Please be careful when typing, upper-case characters are distinguished from lower-case.

  To change a password - click the Password check box and enter a new password. To remove a password - click the Password check box and click OK once and then again to confirm.

WARNING: IF YOU FORGET THE PASSWORD, THERE IS ABSOLUTELY NO WAY TO RECOVER IT. YOU WILL LOSE ALL INFORMATION IN THE PARTITION AND HAVE TO RE-INITIALIZE THE PARENT VOLUME TO RECOVER THE SPACE THE PARTITION OCCUPIES.

- **Open Without Password** - If this option is checked, the password will only be needed to modify or delete the partition. This is useful if you want to create a locked partition which can be read from but which cannot be written to. Without the password, no one would be able to unlock the partition. This option is dimmed (not available) until the Password option is activated.

- **Open Automatically** - Check this option if you want the partition to be opened automatically when the partition's parent volume is opened. Whenever password-protected partitions are opened automatically, a dialog box appears with a request to type in the password. MultiDisk will wait for a password for 60 seconds. If there is no mouse or keyboard activity during this time, MultiDisk will close the dialog, the partition will not be opened and the startup process will continue.

8) **Click the Create button.**

The partition is created and added to the Available Partitions list.

Opening Partitions

You must open a partition to be able to use it.

To open a partition, follow these steps:

1) **Choose MultiDisk from the Apple menu.**

   The MultiDisk DA window appears with the current startup disk as the current volume.

2) **Click the Drive button until the parent volume of the partition you wish to open becomes the current volume.**

   The name of the current volume will be displayed immediately above the Available Partitions list. The list should contain the partition you wish to open.

   Pressing the Command (right arrow) or Command (left arrow) key is equivalent to clicking the Drive button.

3) **Select the name of the partition in the Available Partitions list. Click the Open button or double-click the partition name.**

   A solid diamond character proceeding the partition name indicates that the partition was created by either Hard Disk Partition from FWB Software or HD Partition which is part of SUM. When selected, a dialog box will appear giving you the opportunity to convert the partition into a MultiDisk partition. The converted partition will not be resizable.

   If the partition is password protected, you will be prompted for the password before you can convert it. The password of the partition cannot exceed the 21 character limit of MultiDisk. The conversion takes only a few seconds. It is recommended that the contents of partitions be backed up before they are converted.

   Warning: Once a partition is converted it will no longer be recognized by the utility that originally created the partition.

Note About MFS Partitions: Because MFS partitions created by Hard Disk Partition are initialized incorrectly for MultiDisk, they cannot be converted (it doesn't hurt if you accidentally try to.)

Note About SUM II And Hard Disk Partition 3 Partitions: MultiDisk supports partitions created by third party software such as SUM II or Hard Disk Partition. However a SUM II complex encrypted partition or a Hard Disk Partition encrypted partition must be decrypted before it can be opened by MultiDisk.

4) **If a password is needed to open the partition, a dialog box will appear with an edit box in which you must type the correct password and then click OK.**

In a password, upper-case characters are distinguished from lower-case characters. If necessary, put the caps lock key in the up position.

Once a partition is opened, it is removed from the Available Partitions list and added to the Open Partitions list and its icon is added to the Finder desktop.

Closing Partitions

When you are finished using a partition, you may close it by following these 2 easy steps:

1) **Choose MultiDisk™ from the Apple menu.**

The MultiDisk DA window appears.

2) **Select the name of the partition you want to close in the Open Partitions list and click the Close button or double-click the partition name.**

If the partition is in use, it cannot be closed.

Note About Closing Partitions: If you are in the System 6 Finder without System 6 MultiFinder, you MUST use the Trash to close a partition. If you are in an application, you can use the MultiDisk Close function in the MultiDisk DA. To close a partition using the trash, drag the partition you want to close to the trash. Under System 7, you can select the partition and choose Put Away from the File menu. Once a partition is closed, its name is removed from the Open Partitions list and its icon is removed from the Finder desktop.

Modifying Partitions

As promised, MultiDisk gives you the flexibility to change the size of your partitions depending upon changes in the way you work with your Macintosh. If you want to erase, resize, rename, or change other attributes of a closed partition, follow these steps:

1) **Choose MultiDisk™ from the Apple menu.**

The MultiDisk DA window will appear with the current startup disk as the current volume.

2) **Click the Drive button until the parent volume of the partition you wish to modify becomes the current volume.**

The name of the current volume will be displayed immediately above the Available Partitions list. The list should contain the partition you wish to modify.

Pressing the Command and right or left arrow key is equivalent to clicking the Drive button.

3) **Select the name of the partition in the Available Partitions list and click the Modify button.**

A dialog box like the one in Figure 4-4 will appear.

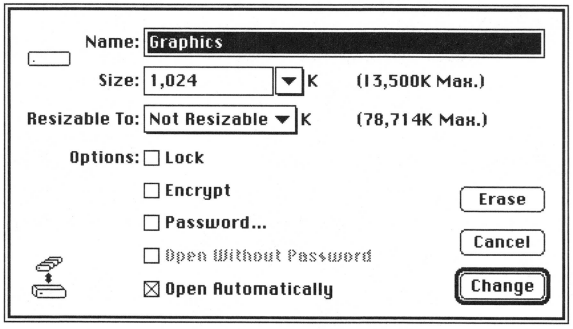

Figure 4-4
Dialog for modifying partitions

4) **If you want to rename the partition, type in a new one or edit the old one on the line labeled "Name."**

This name is used to identify the partition in the MultiDisk DA and on the Finder desktop.

5) **To resize a partition, select the line labeled "Size" and type in a new size for the partition.**

The maximum size is limited only by the Resizable to attribute of the partition and the current amount of free space on the parent volume, whichever is smaller. Minimum size is limited by the amount and placement of data on the partition.

Directly to the right of the Size field, there is a box containing a downward-pointing triangle. Pressing this box displays a pop-up menu containing suggested sizes.

The minimum size that the partition can be sized to will be displayed as the first item in the size pop-up menu. The minimum size is based on the amount of space used in the partition and where within the partition files are allocated. Optimizing a partition with DiskExpress II (with the Monitor checkbox unchecked) ensures that the minimum size is the smallest possible value.

The current maximum size will be displayed as the last item in the size pop-up menu and to the far right of the size field.

Choosing one of the sizes from the size pop-up menu places that size into the size field. You can, of course, still type a different size into the size field. Partitions can be resized to be smaller or larger than their current size.

6) **To change the maximum size to which the partition can be resized, press in the box labeled "Resizable to" and select from the pop-up menu the new maximum size that the partition may be resized to.**

Warning: If this value is changed, the partition will be erased automatically.

This value is the new maximum size that the partition can be resized to without erasing the partition. The maximum value that can be selected is the total usable space on the parent volume. This maximum size is displayed as the last item in the Resizable To pop-up menu and to the far right of the Resizable To field.

Pressing on the Resizable To box displays a pop-up menu containing the allowable Resizable To values. You can choose from "Not Resizable", 1, 2, 4, 8, and 16 megabytes in addition to multiples of 32 megabytes. The total Resizable To values of all partitions can exceed the size of the parent volume.

Why is partition size so important? The smaller the Resizable To value you choose, the more efficient the Macintosh is at storing information within the partition. A partition resizable to 32 megabytes uses more partition space for the directory than a partition resizable to 8 megabytes. Therefore, new partitions of the same size will have different amounts of free space depending upon the value of this Resizable To field.

7) **Click the check boxes of the options you wish to change.**

You may change (activate) any of the following options:

- **Lock** - Activating this option will prevent the partition from being written to.

- **Encrypt** - Activating this option will encrypt the entire contents of the partition.

- **Password** - Activating this option will cause a dialog box to appear in which you can type a password of up to 21 characters for the partition. When typing, the characters are displayed as diamonds. After typing the password and clicking OK you will be asked to re-enter the password for confirmation. Please be careful when typing as upper-case characters are distinguished from lower-case.

  To change a password, click the Password check box and enter a new password. To remove a password, click the Password check box and click OK once and then again to confirm.

Warning: IF YOU FORGET THE PASSWORD, THERE IS ABSOLUTELY NO WAY TO RECOVER IT. YOU WILL LOSE ALL INFORMATION IN THE PARTITION AND HAVE TO RE-INITIALIZE THE PARENT VOLUME TO RECOVER THE SPACE THE PARTITION OCCUPIES.

- **Open Without Password** - If this option is checked, the password will only be needed to modify or delete the partition. This is useful if you want to create a locked partition which anyone can read from but no one can write to. Without the password, they would be unable to unlock the partition. This option is dimmed (not available) until the Password option is activated.

- **Open Automatically** - Check this option if you want the partition to be opened automatically when the partition's parent volume is opened. Whenever password-protected partitions are opened automatically, a dialog box appears with a request to type in the password.

8) **To record any changes made to the partition, click the Change button.**

If the Encrypt option was changed, there will be a delay while the partition is either encrypted or decrypted. MultiDisk requires about 6 to 7 seconds per megabyte to change the encryption. It is recommended that the contents of partitions be backed up before they are encrypted/decrypted.

9) **To erase a partition, click the Erase button. You can also select the partition's icon on the Desktop and choose the Erase Disk option from the Special menu or by using a similar command in any other application.**

Warning: All files on the partition will be deleted.

Note: MultiDisk partitions retain their ability to be resized after they have been erased.

Viewing Partitions

An open partition's attributes cannot be modified; however, they can be viewed by following these 3 easy steps:

1) **Choose MultiDisk™ from the Apple menu.**

The MultiDisk DA window will appear.

2) **Select the name of the partition you want to view in the Open Partitions list and click the View button.**

A dialog box like the one in Figure 4-5 will appear.

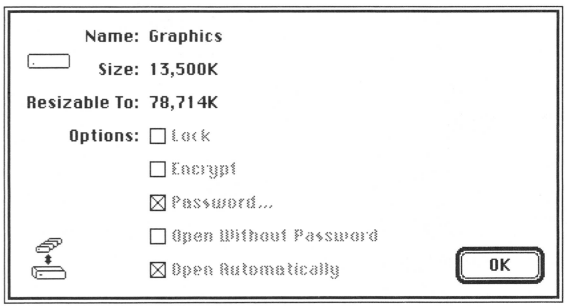

Figure 4-5
Dialog for viewing open partitions

This dialog details the following attributes a partition may have:

- **Name** - This is the name used to identify the partition in the MultiDisk DA and on the Finder desktop.

- **Size** - This is the current size of the partition.

- **Resizable to** - This is the maximum size that the partition can be resized to without erasing it.

- **Lock** - This option will be checked if the partition is locked. A locked partition cannot be written to.

- **Encrypt** - A check in this box indicates that the partition is encrypted.

- **Password** - This option will be checked if the partition has a password assigned to it. Information about a partition can be viewed without knowing its password.

- **Open Without Password** - If this option is checked, the partition's password is only needed to modify or delete the partition. This is useful if you want to create a locked partition which can be read from but which cannot be written to. Without the password, no one would be able to unlock the partition.

- **Open Automatically** - This option will be checked if the partition is opened automatically when the partition's parent volume is opened. Whenever password-protected partitions are opened automatically, a dialog box appears with a request to type in the password. MultiDisk will wait for a password for 60 seconds. If there is no mouse or keyboard activity during this time, MultiDisk will close the dialog, the partition will not be opened and the startup process will continue.

3) **Click the OK button when you have finished viewing.**

The dialog box disappears.

Erasing Partitions

There are two ways to erase a MultiDisk partition:

1) **Select the partition's icon from the Desktop and choose the Erase Disk option from the Special menu or by using a similar command in any other application.**

2) **Use the Erase button in the Modify dialog box accessed from the MultiDisk DA.**

Note: MultiDisk partitions retain their ability to be resized after they have been erased.

Deleting Partitions

You may delete a partition by following these steps:

1) **Choose MultiDisk™ from the Apple menu.**

The MultiDisk DA window will appear.

2) **Click the Drive button until the parent volume of the partition you wish to delete becomes the current volume.**

The name of the current volume is displayed immediately above the Available Partitions list. The list should contain the partition you wish to delete.

Pressing the Command – right arrow or Command – left arrow keys is equivalent to clicking the Drive button.

3) **Select the name of the partition in the Available Partitions list and click the Delete button.**

Warning: Deleting a partition deletes all of the files within the partition. If what you really want to do is close a partition, follow the steps for closing.

4) **If a password is needed to delete the partition, a dialog box will appear with an edit box in which you must type the correct password and then click OK.**

In a password, upper-case characters are distinguished from lower-case characters. If necessary, put the caps lock key in the up position.

5) **In the next dialog box that appears, click Delete.**

This dialog box is provided as insurance. You must confirm that you want to proceed, understanding that anything on the partition will be deleted.

Once a partition is deleted, its name is removed from the Available Partitions list and the space it occupied on its parent volume becomes free space.

Section 5: Using MultiDisk Partition Recover

MultiDisk Partition Recover is an application that attempts to recover damaged or deleted partitions, or partitions on a damaged disk. Double-click the MultiDisk Partition Recover icon to open MultiDisk Partition Recover. A dialog box, shown in Figure 4-6 will appear.

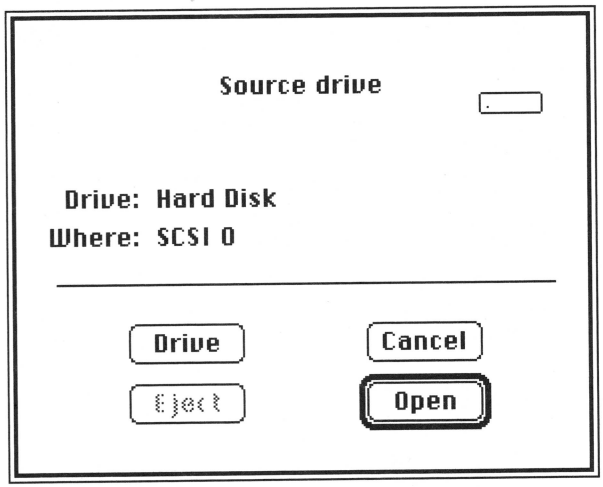

Figure 4-6
Choose the drive from which you wish to recover the partition,

1) **Click the Drive button until the current drive is the source drive that contains the partition you want to recover.**

   You can also use the Tab key or the Command and right-arrow key to change the current drive.

   Typing Command -. (period) is equivalent to clicking the Cancel button.

2) **Click the Open button.**

A dialog box similar to the one in Figure 4-7 will appear.

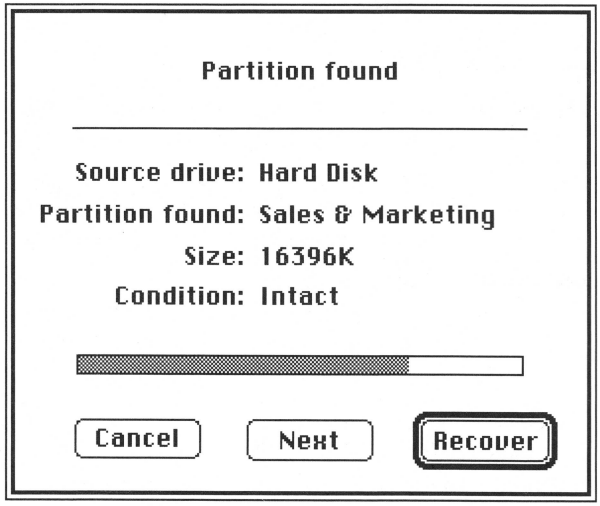

Figure 4-7
Click Recover when the partition you want to recover is found.

MultiDisk Partition Recover will begin searching for partitions, when the first partition is found, MultiDisk Partition Recover will provide you with its name and information about the partition's size and condition. Typing Command - . (period) will halt the search in progress.

Typing Command -. (period) is equivalent to clicking the Cancel button.
Typing Command - Tab is equivalent to clicking the Next button.

When a partition is found, one of the following conditions will be reported:

Intact
This condition indicates that MultiDisk Partition Recover has found a partition header and fragment map that make sense. Successful partition recovery is likely.

Deleted
This condition indicates that the partition that was found was previously deleted. MultiDisk Partition Recover has found a partition header and fragment map that make sense. Portions of this partition may have been overwritten since the partition was deleted. Successful recovery of the remaining part of the partition is likely.

Repaired
This condition indicates that the partition header was corrupted and that MultiDisk Partition Recover was able to restore usable header data and make sense of it. The partition may now be usable if the parent drive directory is intact. MultiDisk Partition Recover has now re-created a partition header and fragment map that make sense. Successful partition recovery is likely.

Questionable
This condition indicates that MultiDisk Partition Recover cannot make sense of the fragment map. Successful recovery may be possible.

Unrecoverable
This condition indicates that the partition header is corrupted. MultiDisk Partition Recover was not able to restore usable header data. MultiDisk Partition Recover cannot recover this partition.

3) **If the partition found is not the partition you are trying to recover, click Next.**

When MultiDisk Partition Recover has found the partition you wish to recover, click Recover.

4) **A dialog box will appear requesting you to select a destination drive to which the partition will be recovered.**

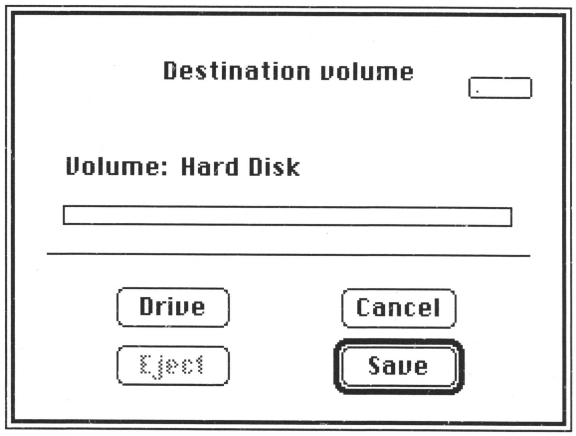

Figure 4-8
Choose a drive on which to save the recovered partition.

Make sure there is sufficient free space on the destination drive to store the recovered data.

5) **Click Save.**

After MultiDisk Partition Recover has attempted to recover your partition, it will report the condition of the recovered partition in a summary dialog. Any of the following conditions may be reported:

Partition Copied Without Errors
All partition data was successfully recovered to a new partition on the destination drive.

Partition Copied With Read/Write Errors
Some data was not able to be recovered. Any block which could not be read from the source partition after three attempts was treated as an empty block.

Partition Copied With Errors
MultiDisk Partition Recover attempted to recover the partition, but there are errors in the fragment map which prevented the partition from being completely copied. This message will only appear on Questionable partitions.

Errors During Recovery

Any block which cannot be read from the source partition after three attempts will be treated as an empty block.

The summary dialog will indicate that the partition was copied with read and write errors if MultiDisk Partition Recover was unable to completely copy the partition's contents. These errors will be reported at the end of the recovery attempt. Any other errors will stop the operation in progress, leaving no copied partition on the destination volume.

Chapter 5

DiskCheck

An Introduction to DiskCheck

DiskCheck is a powerful automatic disk diagnostics program. When any error is detected, DiskCheck displays a brief description of the error and the appropriate corrective action that you should take. Even though you may not understand one or more of the technical error messages, the instructions to correct the error(s) should be followed.

DiskCheck helps you diagnose and pinpoint disk directory damage as well as hardware malfunctions. This tool can be used to ensure that your disk maintains a stable operating environment in which DiskExpress II can work. DiskExpress II should not be turned on if DiskCheck detects any errors on any of the hard disks or partitions (volumes) that you could use. Any error reported by DiskCheck must be corrected by using the instructions provided to you by DiskCheck.

DiskCheck is capable of detecting most directory damage and disk hardware malfunctions. As a bonus, DiskCheck can list files which are anchored (should not be moved during optimization) and explain why they are anchored.

Note: Having anchored files does not represent an error.

What Is The Directory?

The directory is the Macintosh Filing System's "map" of all information in a volume. It is the portion of a volume used to store the number, names, locations, and sizes of files and folders saved on that volume. When any software wants information from a volume, the Filing System must go to the directory to find out where the information is located. Also, when any software wants to save information to a volume, the Filing System must go to the directory to find out where the information can be placed. All the necessary information about where the data was saved is then recorded in the directory.

What Is Directory Damage And How Does It Affect You?

When any of the information about the number, names, locations or sizes of files and folders in a directory is either incorrectly updated or not updated at all, that directory is considered damaged. This damage is normally limited to only a specific area of the directory. So, it's quite common for directory damage to remain undetected until long after the damage actually occurred.

When the Filing System attempts to use the incorrect directory information to read or write information on a volume, an error will occur. This error may be very minor and go unnoticed. It might cause an instantaneous System bomb or crash. Or, worst of all, the entire contents of your volume could become inaccessible!

A special note: Many Macintosh owners mistakenly think that the invisible "desktop file" is a part of the directory. It is not. The truth is that the desktop file is maintained by the Finder. It contains a list of your applications and the folders in which they are located (for quick opening), and the icons and "Get Info" comments of all files. DiskCheck does not "check" the desktop file. Rebuilding the desktop file will not repair any directory damage.

How Does Directory Damage Occur?

The continued accuracy of information in the directory depends on the Filing System's ability to perform ALL of its update and maintenance operations without any unexpected interruptions. Also, to help speed up many Macintosh operations, important pieces of information are temporarily kept in memory instead of being immediately saved to the volume.

Common types of unexpected interruptions are System bombs and crashes, power loss (lights flicker), turning your Macintosh off without using the proper "Shut Down" procedure, and pressing the "RESET" button. Depending upon the exact microsecond the interruption happened, you stand a good chance that your directory was either not updated correctly and/or some information had not been saved to the volume. You now have directory damage and/or information loss.

What Are Hardware Malfunctions And How Do They Affect You?

If your directory isn't damaged, yet you are experiencing problems using a disk, you may have some form of hardware malfunction. The malfunction could be due to any combination of mechanical or electronic failures, a portion of the disk's storage media that can't be properly read from or written to, or your hard disk's "driver" software isn't functioning correctly. Any of these problems could be an intermittent or a consistent failure. Fortunately, most disk drives and their driver software are very reliable.

The most common type of hardware malfunction is marginal or bad media. Information can be saved to a part of your disk without error, yet the next time it is read an error occurs. Again, as with directory damage, this media malfunction may not be detected until long after the malfunction actually occurred.

You may have always had bad blocks on your hard disk. But, unless you filled your disk 100% full (no free space left), or formatted the disk, the bad block might stay undetected. Both DiskCheck and DiskExpress II can read and write to the entire disk's media, including areas that most other programs are not able to. DiskCheck and DiskExpress II cannot create media malfunctions. They only report them to you if they are found.

DiskCheck will report any bad blocks that have been "spared" by the System 7 bad block sparing mechanism or by third party utilities. These spared blocks are bad blocks that have been discovered and locked out of the volume's free space. Sparing a bad block allows you to continue to use your volume without the danger of data loss. The Verify Media check within DiskCheck will not attempt to verify spared blocks.

Remember, just because you haven't observed any problems with your disk doesn't mean that the error(s) reported to you by DiskCheck or DiskExpress II are inaccurate or unimportant. DiskCheck errors should not be ignored. You have an opportunity to correct the problem before you lose any valuable information.

What Are Anchored Files?

Anchored files are files which cannot be moved by DiskExpress II. A file is anchored because some program relies on the file residing at a specific location on the disk. Also anchored are bad allocation blocks that have been "spared" by the System 7 bad block sparing mechanism. These spared allocation blocks are bad blocks that have been discovered and locked out of the volume's free space. When a volume with anchored files or anchored allocation blocks is optimized, there is a possibility that other files or the free space will be fragmented around the anchored areas. Having anchored files or anchored allocation blocks does not represent an error and no repair is necessary.

Using DiskCheck

DiskCheck requires that DiskExpress II be loaded at startup. DiskExpress II does not have to be "on." DiskCheck is compatible with the Macintosh Plus, SE, Classic, LC, SE/30, II, IIx, IIcx, IIsi, IIci, IIfx, Portable, PowerBooks, Quadras, and Classic II computers.

Checking A Volume

If you are ready to "check" a volume with DiskCheck, follow these four steps:

1) **Select the DiskCheck icon and choose Open from the File menu, or just double-click the icon.**

   The DiskCheck window will appear on the screen (Figure 5-1.) The DiskCheck window is divided into two halves. The top half allows you to select the volume to check and to select which checks you want performed. The bottom half is a "log" of the activities performed by DiskCheck since it was opened.

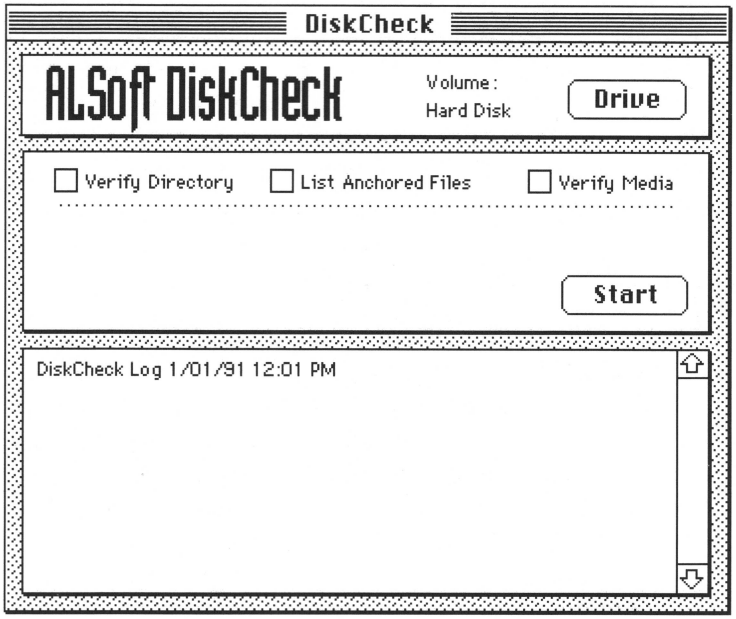

Figure 5-1
DiskCheck window with a volume named Hard Disk selected as the current volume.

2) **Click the Drive button until the volume you wish to check becomes the current volume.**

The name of the current volume is displayed under the label "Volume:" in the top section of the DiskCheck window.

3) **Click the check boxes of the "checks" you wish to have DiskCheck perform.**

DiskCheck lets you choose any of the following options:

List Anchored Files
This option gives you a list of the files that are anchored (cannot be optimized) on the current volume along with an explanation of why they are anchored. Also listed are allocation blocks that have been spared by the System 7 bad block sparing mechanism. The length of time required for this check is dependent upon the number of files on the volume. Times can range from a few seconds to 3 minutes.

Verify Directory

This option checks the current volume for directory damage and lists the errors found. A list of the errors found will be appended to the log. Instructions for repairing any damage are also provided. The length of time required for the Verify Directory check is dependent upon the number of files on the volume. Times can range from a few seconds to 9 minutes.

One very common type of directory damage is the presence of records for fragments of a file that no longer exists. These records are referred to as "Orphaned Extents." DiskCheck will offer to repair this type of directory damage by removing orphaned extent records from the volume's directory.

Verify Media

This option checks the media of the current volume for read/write errors. A list of blocks that could not be verified is appended to the log. Also logged are blocks that have been spared by the System 7 bad block sparing mechanism, Sector Collector, MacTools or Norton Utilities. All blocks are given in terms of "volume" blocks as opposed to allocation blocks. Spared blocks will not be verified. As noted below, Verify Media can be forced to verify spared blocks. This is useful in the case when errors in the directory (where spared blocks are recorded) prevent Verify Media from operating properly. The length of time required for this check is dependent upon the number of blocks verified. Times can range from a few seconds to several hours.

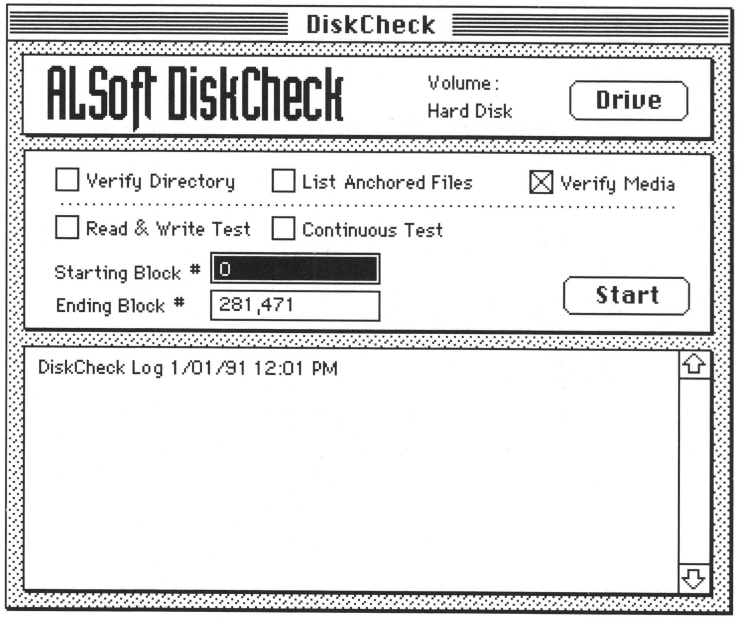

Figure 5-2
Additional options are available when verifying media

The following additional options are available to control media verification:

- **Continuous -** This option causes the media verification to be repeated until you explicitly cancel it. This is useful for finding sporadic read/write errors.

- **Read & Write Test -** This option changes the media verification from a read-only test to a more comprehensive read and write test. While a read and write test is more thorough, there is the risk that data could be lost from one block if the Macintosh is interrupted (such as a power loss) while test data is being written to the block. Also, a read and write test doubles the length of time required to verify.

- **Starting Block # -** Enter the number of the first block to verify (default: 0.)

- **Ending Block # -** Enter the number of the last block to verify (default: last block on volume.)

4) **Click the Start button to initiate the selected checks. A dialog is presented that displays the percentage of completion and a Cancel button. At the start of each check, the percentage of completion is reset to zero.**

Note: Hold down the Option key while clicking the Start button to force Verify Media to verify ALL blocks between the starting and ending block - including those that have been spared.

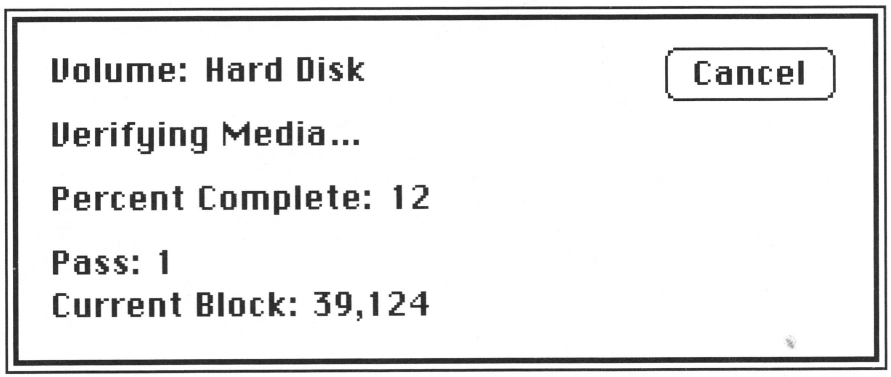

Figure 5-3
The Progress Dialog

The selected checks are performed in the following order:

1) List Anchored Files
2) Verify Directory
3) Verify Media

Clicking the Cancel button terminates the check currently being performed and prevents the remaining checks from starting.

As each check is performed, warnings, errors and summary information are appended to the log.

Using The Log

The scroll bar in the lower half of the DiskCheck window can be used to review any portions of the log which have scrolled out of view. If you wish to keep a permanent record of the log, you can save the log in a text file (readable by TeachText or any word processor) using the Save Log menu command or you can print the log using the Page Setup and Print Log menu commands.

Trouble-Shooting

DiskCheck has one limitation when checking a hard disk. Since DiskCheck performs all read and write operations through the driver software on the hard disk, it is possible for the driver software to fail and leave DiskCheck suspended. Typically this will occur when DiskCheck instructs the driver to read or write a bad block on the hard disk. DiskCheck is suspended when control of the Macintosh is turned over to the driver. The driver will sometimes wait forever for the hard disk to complete the read or write (which it cannot) leaving DiskCheck suspended. If the List Anchored Files or the Verify Directory checks fail to complete (the progress dialog displays the same percentage for 10 minutes or longer) then a bad block was probably encountered. You should restart your Macintosh and perform DiskCheck's Verify Media check. If the progress dialog displays the same current block number for more than a few seconds, then you know that the block with the currently displayed block number is bad.

Recovering From Directory Damage

If an error is found in a directory then the directory must be repaired or recreated. Disk First Aid is the directory repair utility that was supplied with your Macintosh. Use it to examine and repair any additional directory errors reported by DiskCheck.

Unfortunately, Disk First Aid cannot repair or even detect every error reported by DiskCheck. It may report that there is "No Repair Necessary" despite the presence of errors. If Disk First Aid reports that it is "Finished, Repair Completed" then check the directory again using DiskCheck to ensure that all errors have been corrected.

If Disk First Aid fails to repair the directory, then the directory must be recreated. The first step in recreating a directory is to make a complete backup of the volume. Do not make a "mirror" or "image" backup of the volume, as this will backup the damaged directory along with the files. Perform a "file" backup instead.

Backup utilities which back up to tape usually offer both "mirror" and "file" backup options. Most other backup utilities perform "file" backups exclusively. Of course, if you backup your volume by dragging groups of files and folders to a backup disk, then you are performing a "file" backup.

The next step in recreating a directory is to erase the volume. Use the Finder's Erase Disk menu command. Dragging all of a volume's files to the Trash does not erase a volume.

The last step in recreating a directory is to restore all of your files from the backup to your volume.

Recovering From Media Damage

The method of recovering from media errors is dependent upon the nature of the error. If DiskCheck repeatedly reports that the same blocks are damaged, you can probably correct the error yourself by formatting the disk that contains the volume.

Before formatting the disk, make a complete backup of all volumes on the disk. Formatting the disk will completely erase the disk including all partitions.

To format a diskette, use the Finder's Erase Disk menu command. To format a hard disk, use the formatting or initialization application that came with the hard disk. For example, an Apple Computer hard disk should be formatted by using the Initialize command in the Apple HD SC Setup utility.

After formatting the disk, verify the media with DiskCheck to ensure that all errors have been removed. If errors are still present then the disk requires service by a qualified technician. If no errors are found then restore all of your files from the backup.

If DiskCheck reports different blocks as damaged every time the media is verified, you probably have some other type of hardware problem. If the volume with the media errors is on an SCSI hard disk, detach all other SCSI devices connected to your Macintosh and try verifying the media again. It could be that one of the other devices is interfering with your SCSI hard disk. Also, try changing the SCSI cable to the hard disk and ensure that your SCSI devices are properly terminated.

Chapter 6

MenuExtend

Introduction:

What Is MenuExtend?

MenuExtend enhances the System 7 Apple Menu for quick and easy access to files and folders. MenuExtend automatically creates submenus up to five levels deep for every folder, alias to a folder or alias to a volume which is stored in the Apple Menu folder. Each submenu displays the contents of its associated folder. An optional setting allows you to specify whether folders will be grouped together at the top or bottom of the submenu, or shown in alphabetical order with files. MenuExtend puts all of your files just a mouse click away.

What MenuExtend Can Do For You

Using MenuExtend can help you in two important ways:

1) MenuExtend will allow you to access files immediately from any application without returning to the Finder.

2) MenuExtend requires very little disk space and a small amount of system memory. You can install it, and never worry about it again.

MenuExtend Control Panel - The Command Center

The MenuExtend Control Panel is the command center for MenuExtend. All interaction with MenuExtend takes place through this Control Panel.

Opening the MenuExtend Control Panel

To open the MenuExtend Control Panel simply choose Control Panel(s) from the Apple menu and open the MenuExtend icon by double-clicking it. The MenuExtend Control Panel window, similar to the one in Figure 6-1, will appear on the screen.

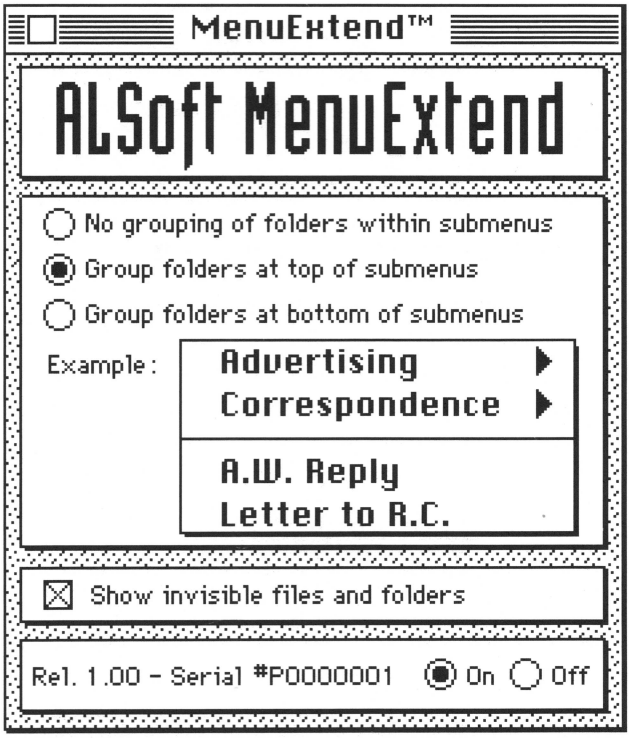

Figure 6-1
The MenuExtend Control Panel

Note: The MenuExtend Control Panel will not open unless MenuExtend was loaded at startup.

MenuExtend Settings

On/Off buttons

These radio buttons allow you to turn MenuExtend on and off. When MenuExtend is turned off, it will still load at startup (you will see its icon) but your Apple Menu will not display submenus.

Folder Grouping
You can specify that folders be grouped together either at the top or bottom of the submenu, or you can have them listed in alphabetical order with files.

To specify folder grouping, choose the radio button for the setting you want.

No grouping of folders within submenus
Folders will not be grouped separately from files.

Group folders at top of submenus
Folders will be grouped at the top of submenus separately from files.

Group folders at bottom of submenus
Folders will be grouped at the bottom of submenus separately from files.

To use the submenus from the Apple menu on other folders, simply make aliases for them and put the aliases in the Apple Menu Items folder. They will appear in the Apple Menu immediately. Any such folders available to you in the Apple menu will now display submenus up to five levels deep.

Note: To temporarily prevent MenuExtend from loading, hold down the Command, Shift, or Option key during startup.

Chapter 7

ScreenEclipse

Introduction:

What Is ScreenEclipse?

ScreenEclipse is a screen saver designed to prevent screen "burn-in" by darkening your computer's screen. Unlike other screen savers, ScreenEclipse does not use large amounts of memory or disk space, and it will not interfere with any computer activity (this is especially important on a file server.) ScreenEclipse accomplishes this by controlling screen brightness rather than by drawing images on the screen. ScreenEclipse lets you set the degree of darkness that you want as well as the length of idle time before an eclipse will begin.

ScreenEclipse is able to work no matter what operation the computer is performing. Other screen savers do not work when the computer is too busy to accept user interaction.

What ScreenEclipse Can Do For You

Using ScreenEclipse can help you in three important ways:

1) ScreenEclipse will prevent images from burning into your screen. This can happen when the same images appear on your screen and remain there, unchanged, for long periods of time. Once burn-in has occurred, there is no way to make the burned-in images disappear.
2) ScreenEclipse requires very little disk space and a small amount of system memory. You can install it, specify your settings and never worry about it again.
3) ScreenEclipse uses no perceptible CPU time. ScreenEclipse will not slow you or your Macintosh down.

The Fundamentals Of ScreenEclipse

ScreenEclipse has five user-definable settings. They allow you to control whether or not ScreenEclipse is active, how long ScreenEclipse will wait before fading your screen, the level of darkness that you want the screen to fade to, which screen corner will cause the screen to fade immediately, and which screen corner will cause ScreenEclipse never to fade your screen.

Customizing these settings to your needs gives you the maximum flexibility when using ScreenEclipse. Once you have selected your settings, ScreenEclipse will work automatically to protect your screen from damage caused by burn-in.

Basic Terms And Concepts

Dim
The method that ScreenEclipse uses to protect your screen from burn-in. ScreenEclipse will dim your screen's brightness to a level that you specify.

Fade
This term is used interchangeably with the word "dim."

Using ScreenEclipse

ScreenEclipse Control Panel - The Command Center

The ScreenEclipse Control Panel is the command center for ScreenEclipse. All interaction with ScreenEclipse takes place through this Control Panel.

Opening the ScreenEclipse Control Panel

To open the ScreenEclipse Control Panel simply choose Control Panel(s) from the Apple menu and double-clicking the ScreenEclipse icon (under System 7) or select the ScreenEclipse icon from the icon list (under System 6.) The ScreenEclipse Control Panel window, similar to the one in Figure 7-1, will appear on the screen.

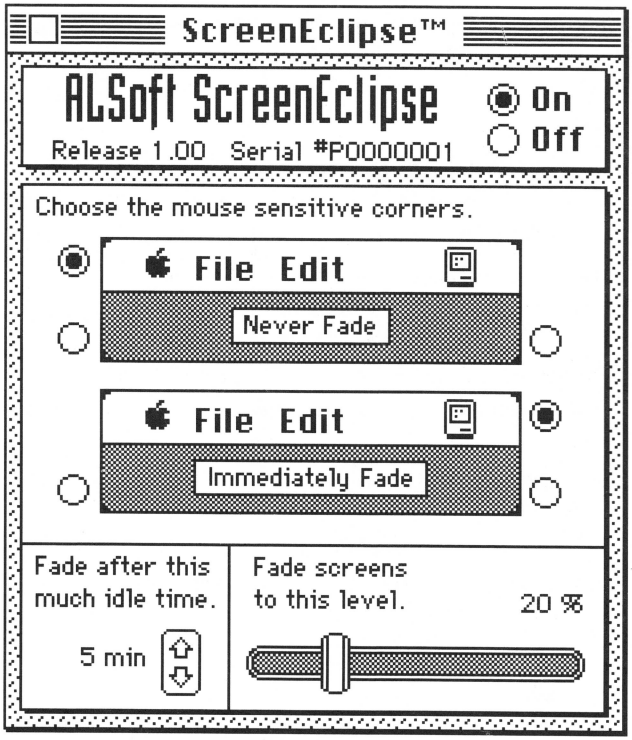

Figure 7-1
The ScreenEclipse Control Panel

Note: The ScreenEclipse Control Panel will not open unless ScreenEclipse was loaded at startup. You cannot have more than one copy of ScreenEclipse loaded and you cannot open more than one ScreenEclipse Control Panel at one time.

ScreenEclipse Settings

On/Off buttons

These radio buttons allow you to turn ScreenEclipse on and off. When ScreenEclipse is turned off, it will still load at startup, you will see its icon, but it will not dim your screen. Turning the Control Panel on when it has been loaded at startup will allow your screen to dim after the specified amount of time without having to restart.

Mouse Sensitive Corners – Never Fade

Set the screen corner for Never Fade by clicking the radio button next your choice of corners. Whenever the mouse is positioned in this corner, the screen will not eclipse, even if the specified time period to wait has passed. Changing the corner for Never Fade will take effect immediately, there is no need to restart your Mac.

Mouse Sensitive Corners – Immediately Fade

Set the screen corner for Immediately Fade by clicking the radio button next your choice of corners. Whenever the mouse is positioned in this corner, the screen will dim immediately, even if the specified time period to wait has not passed. Changing the corner for Immediately Fade will take effect immediately, there is no need to restart your Mac.

Note: On Macintoshes with multiple screens, the Never Fade and Immediately Fade corners are the corners on the screen with the menu bar.

Delay Until Screen Fades

When there has not been a disk insertion or any mouse or keyboard activity for the amount of time you specify, the screen will fade. You can specify the percentage of the screen dimming by using the Percentage to Fade Screen control. The delay until screen fades setting is changed, in one minute increments by clicking on the up and down arrow buttons in the lower left section of the ScreenEclipse Control Panel.

Percentage to Fade Screen

The amount of dimming that will occur when it is time for a screen fade can be changed by using the slide bar. The slide bar can be operated with the mouse, or by using the left and right arrow keys on the keyboard. When using the mouse, the screen is dimmed to the current percentage shown next to the slide bar. Holding down the Option key while operating the slide with the mouse will cause the slide to operate without dimming the screen. Any change to the percentage will take effect immediately, there is no need to restart your Mac.

Trouble-Shooting

❑ **Problem: ScreenEclipse Control Panel will not open.**

Solution: The ScreenEclipse Control Panel will not open unless ScreenEclipse was loaded at startup. Restart your machine, making sure that you see the ScreenEclipse icon during startup. If it is not there, re-install ScreenEclipse using the ALSoft Power Utilities Installer. Instructions for doing this are found in the beginning of this manual in the section called, Installing ALSoft Power Utilities.

Problem: ScreenEclipse will not load.

Solution: You cannot have more than one copy of ScreenEclipse loaded. Check to be sure that only one copy of ScreenEclipse resides in your System Folder.

Note: To temporarily prevent ScreenEclipse from loading, hold down the Command, Shift or Option key during startup.

Chapter 8

DiskFlash

Introduction:

What Is DiskFlash?

DiskFlash is an Control Panel Device that will indicate whenever your disk has read or write activity by displaying a flashing disk icon in a corner of the menu bar. DiskFlash does not use large amounts of memory or disk space, and it will not interfere with any computer activity (this is especially important on a file server.) DiskFlash allows you to specify the corners for display of both read and write activity.

What DiskFlash Can Do For You

Using DiskFlash can help you in three important ways:

1) DiskFlash will indicate to you when your disk is being accessed for any information (read activity) and when information is being saved to your disk (write activity.)

2) DiskFlash requires very little disk space and a small amount of system memory. You can install it, specify your settings and never worry about it again.

3) DiskFlash is very fast. DiskFlash will not slow you or your Macintosh down.

The Fundamentals Of DiskFlash

DiskFlash has three user-definable settings. They allow you to control whether or not DiskFlash is active, which corner DiskFlash should use to display read activity and which corner DiskFlash should use to display write activity. Customizing these settings to your needs gives you the maximum flexibility when using DiskFlash. Once you have selected your settings, DiskFlash will work automatically.

Terms And Concepts

Read Activity
Read Activity occurs any time that your Macintosh accesses your disk to get data from it, reading information from the disk.

Write Activity
Write Activity occurs any time your Macintosh accesses your disk to save data to it, writing information to the disk.

Using DiskFlash

DiskFlash Control Panel - The Command Center

The DiskFlash Control Panel is the command center for DiskFlash. All interaction with DiskFlash is through this Control Panel.

Opening the DiskFlash Control Panel

To open the DiskFlash Control Panel simply choose Control Panel(s) from the Apple menu and open the DiskFlash icon by double-clicking on it. The DiskFlash Control Panel window, similar to the one in Figure 8-1, will appear on the screen.

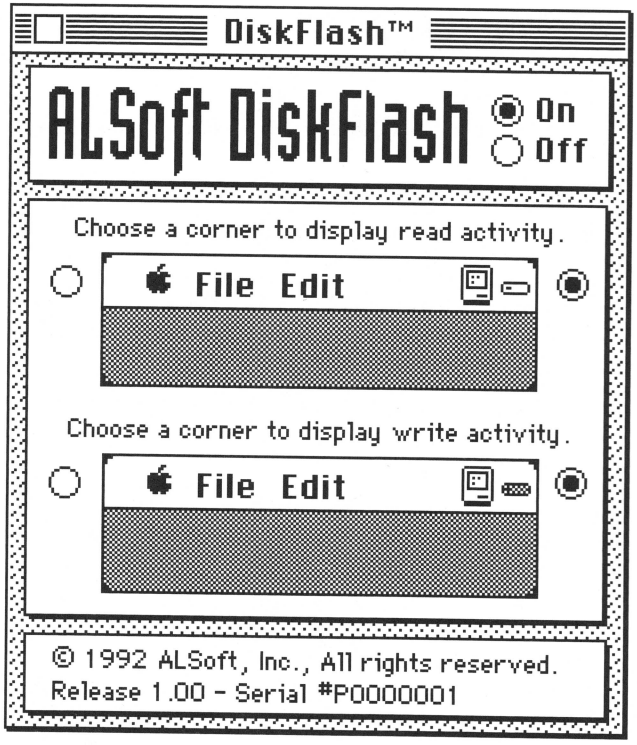

Figure 8-1
The DiskFlash Control Panel

Note: You cannot have more than one copy of DiskFlash loaded and you cannot open more than one DiskFlash Control Panel at one time.

DiskFlash Settings

On/Off buttons

These radio buttons allow you to turn DiskFlash on and off. When DiskFlash is turned off, it will still load at startup, you will see its icon, but it will not flash to indicate read or write activity. Turning the Control Panel on when it has been loaded at startup will begin the display of read and write activity without having to restart.

Display Corner – Read Activity

Set the menu corner for Read Activity by clicking the radio button next to your choice of corners. Whenever there is read activity, the DiskFlash icon will flash in that corner. Changing the corner for Read Activity will take effect immediately, there is no need to restart your Mac.

Display Corner – Write Activity

Set the menu corner for Write Activity by clicking the radio button next to your choice of corners. Whenever there is write activity, the DiskFlash icon will flash in that corner. Changing the corner for Write Activity will take effect immediately, there is no need to restart your Mac.

Note: On Macintoshes with multiple screens, the Read Activity and Write Activity corners are the corners on the screen with the menu bar.

Note: To temporarily prevent DiskFlash from loading hold down the Command, Shift or Option key during startup.

Glossary

ALSoft Power Utilities Glossary

Application Program
An **application program** is a tool your computer uses to manipulate information and perform a useful function for you. Applications include such products as MacWrite and MacPaint.

Block
A **block** is one of an integral number of areas that composes a volume. Each block holds as little as 1/2K of data. A double-sided floppy disk has 1,600 blocks while a 20 megabyte hard disk can have over 40,000 blocks. The Macintosh stores files by breaking them into block-size pieces and writing them into unused blocks wherever they are available.

Current Startup Disk
The startup disk whose system file the Macintosh is currently using. This disk is usually shown in the upper right corner of your Desktop.

Desk Accessory
Desk accessories, available from the Apple menu, are mini-applications you can use from within most applications. Desk accessories let you do things like calculations while you are working on a word processing document, choose the printer to use, and even keep a scrapbook full of your favorite illustrations or text you use in a variety of documents. Examples are the Calculator, Alarm Clock, and Scrapbook. Desk Accessories are also called accessories or DAs.

Dim
The method that ScreenEclipse uses to protect your screen from burn-in. ScreenEclipse will fade your screen to a level of darkness that you specify.

Directory
Blocks set aside by the Macintosh to store the number, names, locations (which blocks), and sizes of files for each volume comprise the **directory**.

Disks
Disks are the magnetic media on which information is stored. There are both floppy disks, such as the 3.5-inch disk which comes with DiskExpress II, and hard disks, like the Apple Hard Disk 20SC. A disk must be initialized before it can be used.

Document
A **document** is a type of file that you create with an application. Documents include the information you enter, modify, view or save to your disk.

Eligible Volume

To be **eligible** for automatic optimization by DiskExpress II, a volume must have been created as an HFS volume. In addition, an eligible volume must be located on a hard disk drive (not a diskette) that is locally attached to the Macintosh, it must not be write protected, and it must have some free space available on it.

> **Note About Networks:** DiskExpress II will not work with any volume that you must access via a network because it is on a file server. These volumes are only eligible to another copy of DiskExpress II installed on the file server.

Encryption

Data on partitions can also be encrypted. **Encryption** is a kind of scrambling device which prevents advanced users with low-level disk tools from bypassing a password and retrieving files from a partition.

Fade

This term is used interchangeably with the word "dim."

File

A file is a collection of information stored in a volume. Files can be system files, application files or document files.

File Server

A **file server** is an application program designed to allow many Macintosh users to share common files via a network. Examples of AppleTalk network file server applications are AppleShare, File Share and TOPS.

FKey

FKey is an acronym for "Function Key" (not the same as the F1-F15 function keys on the Apple Extended Keyboard.) Function keys are micro-applications that provide simple functions. They are invoked from the keyboard by holding down the Command and Shift keys while typing the number keys 0-9 (main keyboard only, not the keypad.) For example, pressing Command - Shift -1 will eject any floppy disk in drive 1. Command - Shift - 3 creates a TeachText document with the current contents of the screen. With only ten number keys, you can normally have only ten FKeys - four of which are already defined. With MasterJuggler, FKeys can be invoked from an FKey list (described elsewhere) which can contain an unlimited number of FKeys.

Font

In typography, a complete set of type in one size and style of character. In the Macintosh world, the term **font** usually refers to a complete set of type including all sizes and styles of character. An example of a font is Geneva.

Fragmented File

A **fragmented file** is a file that is stored in noncontiguous blocks (blocks not located next to each other.) Over time, virtually every file can become fragmented, including the volume directory. To read an entire fragmented file, your hard drive must move its head from one part of a volume to another. The more fragmented files become, the longer it takes to retrieve information from them.

Fragmented Volume

A **fragmented volume** is a volume that contains fragmented files or fragmented free space. Free space is considered fragmented if the unused blocks are noncontiguous.

Free Space

The **free space** encompasses all the unused blocks on a volume. As free space, these blocks are available to be allocated to files or to the directory. Once a file is deleted, the blocks previously occupied by the file will be returned to the free space.

Hot Keys

Keyboard Command key equivalents and modifiers assigned by the user as a shortcut to invoke a MasterJuggler function.

Opening Partitions

A partition must be opened before it can be used. Partitions can be opened manually with the MultiDisk DA or they can be configured to open automatically when their parent volume is opened.

Partition

Many hard disks come with management utilities which allow you to divide a volume into additional volumes called **partitions**. There is also independent system software, such as MultiDisk™ from ALSoft, SUM, and Hard Disk Partition™ which allows you to partition a hard disk.The original volume is called the root or parent volume. Partitions are used exactly like their parent volumes. In fact, partitions are represented on the Finder desktop with the same icon as their parent volume.

Partition Size

The size of a partition is limited only by the amount of free space on its parent. If you make a partition too small, it can be resized later. Sizes are specified in kilobytes (K) or megabytes (MB.) One kilobyte equals 1024 bytes while one megabyte equals 1024 kilobytes.

Password Protection

Individual partitions can be protected from unauthorized access by a password. Without the correct password, you cannot open, modify, or delete a partition.

Pop-Up Menu
MasterJuggler employs menus that are activated by pressing a special key sequence and clicking the mouse button. The menu will "**pop-up**" (appear) near the current position of the mouse pointer, unless it is in the menu bar at the top of the screen. The menu will automatically adjust its display position according to its size and the space available between the pointer and the edges of the screen. Choosing from a pop-up menu is the same as selecting from a drop down menu in the menu bar.

Read Activity
Read Activity occurs any time that your Mac accesses your disk to get data from it, reading information from the disk.

Sound
Predefined noises that can be played through the Macintosh speaker. **Sounds** can be anything from a simple beep to an elaborate tune. There are four common types of sound files: SoundCap™, SoundWave™, SoundEdit™, and resource (containing Macintosh II and HyperCard sound resources, which are both playable by MasterJuggler.)

Startup Disk
A disk that contains a System folder. Most people who have a hard disk use it as the **startup disk**.

Startup Volume
The **startup volume** is the volume which contains a group of special files stored in the System Folder. Your Macintosh cannot operate without the information in these files. The startup volume appears at the top-right corner of the desktop.

Suitcase File
A file containing DA, font, FKey or sound system resources.

System File
A file Macintosh computers use to startup and to provide system-wide information and control (shown to the left.)

System Folder
A folder that contains a System file and a Finder file. It also usually includes at least one printing resource, such as the ImageWriter, AppleTalk ImageWriter, or LaserWriter. You should also find other files in a **System Folder** - Scrapbook file, Clipboard file, and so on.

System Resource
Any system-wide information (such as DAs, fonts, FKeys, and sounds) which normally resides in the System file.

System Resource File
A file containing system resources.

System Resource Names & Numbers
System resources have both names and numbers to identify them. For example, the name of the Geneva font is "Geneva" and its number is 3. You usually specify a system resource by name and need not be concerned about numbers. Occasionally two or more system resources will have the same (conflicting) names or numbers. MasterJuggler includes utilities to rename and renumber DAs, fonts, FKeys, and sounds to resolve conflicts. A special utility, Resource Resolver, is included with Juggler Utilities to automatically renumber fonts or sounds that have the same number.

System Sound
The sound the Macintosh makes whenever it wants to get your attention. By default, the **system sound** is a simple beep.

Volume
An initialized disk is called a **volume**. Because a disk often contains only one volume, the terms disk and volume are frequently used interchangeably.

Write Activity
Write Activity occurs any time your Mac accesses your disk to save data to it, writing information to the disk.

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·A·L·S·O·F·T·

MACINTOSH SYSTEM SOFTWARE

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